Society After Money

thinking|media

Series Editors:
Bernd Herzogenrath
Patricia Pisters

Society After Money

A Dialogue

Project Society After Money

BLOOMSBURY ACADEMIC
NEW YORK • LONDON • OXFORD • NEW DELHI • SYDNEY

BLOOMSBURY ACADEMIC
Bloomsbury Publishing Inc
1385 Broadway, New York, NY 10018, USA
50 Bedford Square, London, WC1B 3DP, UK

First published in the United States of America 2019

Cover design: Daniel Benneworth-Gray
Cover Image © Paolo Sanfilippo

A catalog record for this book is available from the Library of Congress.

ISBN: HB: 978-1-5013-4737-5
ePDF: 978-1-5013-4739-9
eBook: 978-1-5013-4738-2

Series: thinking|media

Typeset by RefineCatch Limited, Bungay, Suffolk
Printed and bound in the United States of America

To find out more about our authors and books visit www.bloomsbury.com and sign up for our newsletters.

Contents

Introduction

Everything revolves around money. No individual or collective practice of any kind, no technological or scientific development seems to be conceivable without money. True, money has long been the object of criticism, but the idea of a "post-monetary society" sparks resistance and unease. And yet historical and anthropological studies (e.g. Le Goff 2011; Graeber 2012) show that money has certainly not always occupied the role that it has today—and that it could therefore change its position again. The project "Society After Money" ("Die Gesellschaft nach dem Geld") was proposed in 2015, and approved for funding as of January 1, 2016 in the framework of the VW funding line "Original—isn't it?/Constellations." The aim was, firstly, to initiate dialogue between heterogeneous areas of knowledge, allowing their theories and critiques of money to cast light on each other. The second aim was to think in an open-ended way about the possibility of post-monetary forms of organization and production (cf. also Nelson and Timmermann 2011). But why did this seem relevant to us in the first place?

In the present time, two self-descriptions overlap: on the one hand, there is talk of a "digital revolution," a "media society," "networks," "Industry 4.0." On the other hand, the present is described as particularly prone to crises: "financial crisis," "economic crisis," "planetary boundaries." So on the one hand there is the description of radical changes in technology and media, and on the other hand, that of profound social dysfunctions. The project is based on the hypothesis that there is a connection, which can be described as the collision between digital media or digital technologies and the medium of money (in addition to other, older conflicts such as that between monetary accumulation and needs). This becomes clear in two respects. Firstly, it hardly seems possible to represent digital media products in the form of commodities. Digital goods are not scarce, since they can, in principle, be reproduced at will. A knowledge or information society based on money is a contradiction in itself. Secondly, there is increasingly urgent debate about whether universally programmable and therefore versatile digital technologies are not making so much labor superfluous, in all industries, that social reproduction by means of wage labor, i.e. labor in exchange for money,

is becoming problematic (these problems are discussed in the article by Peter Fleissner[1]). These obvious problems with monetary mediation (and older problems relating to this) have repeatedly inspired imaginative self-descriptions of society, especially in science fiction, which envisage a post-monetary future (see the chapter by Annette Schlemm).

After the crisis of 2008, a vague unease about "the financial system" became widespread. The self-evident nature of monetary organization has come to seem increasingly fragile—except to those who construct conspiracy theories blaming the crisis on "greedy speculators." In many respects, however, it has been business as usual, and no broad or fundamental debate has even begun (Mirowski 2014). This is why we need to discuss, without foregone conclusions, forms of organization and production that no longer use money as their (central) medium (for the question of whether and how money can be defined as a medium, see the trialogue between Lohoff, Pahl and Schröter; for the technological and institutional evolution of money, which is possibly leading to a new change brought about by digital technologies, see Aigner and Scholz-Wäckerle). But why does money seem so indispensable?

If we take the critical analysis by Ernst Lohoff (in this volume) as a starting point, money mainly seems to be indispensable because the form of separate private production appears as natural. That is, despite the obvious sociality of humans, and the specific sociality of all production, even today (we need raw materials from others, etc.), individual people and companies produce on their own, and then, *ex post*, connect to one another on markets via exchange. As Tobias Aufderheide-Kohl shows in this volume, the dominant "neoclassical" school of economics (cf. Colander et al. 2004; cf. also Dobusch and Kapeller 2012), against all historical and anthropological evidence, regards this kind of facilitation of exchange as the reason for the emergence of money.[2] The hypothesis here is that humans have always produced and exchanged separately and privately—and money was only invented as a practical aid. Of course, today's highly complex market economy presupposes the existence of money, and could probably not function without it—but have people really always produced separately and privately (what about guilds?), and does it have to stay this way forever, particularly at a time when general interconnectedness is on everyone's lips? Generally speaking, there seem to be three ways in which money might conceivably be overcome:

[1] See also the literature review in Schröter (forthcoming).

[2] And children's books on this topic drive the same false and ideologically motivated notion into the heads of children, cf. Neiser and Butschkow (2000).

(a) Finding ways in which exchange can function effectively without money (and its unpleasant side effects), e.g. transmitting the relevant information by other means, or (partially) delegating the coordination to things, which have become smart themselves, and/or to artificial intelligences. This seems to be the core of the concept proposed by Stefan Heidenreich, a post-monetary economy based on algorithmic matching (see text by Stefan Heidenreich).

(b) Replacing *ex post* with *ex ante* mediation, i.e. instead of everyone producing for the market separately,[3] the members of a society discuss in advance what they need and want, and then produce and distribute the corresponding products. This raises the whole issue of a plan-based economy, though it does not necessarily imply central planning—a model that now seems virtually indefensible from both theoretical and historical standpoints (but for new approaches to central planning see the chapter by Peter Fleissner). Today there are diverse concepts of participatory economy, decentralized and distributed planning (for Hayek's theoretical critique of—mainly but not exclusively—central planning, see the chapter by Jasmin Kathöfer and Jens Schröter in this volume. This text offers a critical discussion of whether Hayek's arguments are really still valid under current media conditions).

A key approach is the area of commoning and commons, which has once again become the subject of intense discussion, especially since the 2009 Nobel Prize in Economics was awarded to Elinor Ostrom (1990). What is crucial here is the idea of replacing non-social production, which is isolated and then coordinated via the movement of things (monetary and commodity flows), with social production, which is ultimately communicative (and therefore coordinated with media that are alternatives to money), but not by means of state planning (it is no accident that the subtitle of the German translation of Ostrom's book situates the commons "beyond market and state").[4] Logically, production of this kind would no longer require any markets or money, because it does not involve exchange. People agree on what is to be produced, divide up the work, make the products, and distribute them according to the democratic decisions made at the outset. Commons

[3] Of course even today efforts are made to discover in advance, e.g. by market research, whether the planned products are really needed. Interestingly, such advance planning is already a step towards an *ex ante* mode of production.

[4] These discussions have been going on for many years—O'Neill (1996) recalled, for example, the position of Otto von Neurath, who was already arguing in the 1920s that an economy based on direct discussion of use value (without a general equivalent as a standard of comparison) should be possible.

and commoning are discussed in the chapters by Stefan Meretz and Friederike Habermann, and are subjected to critical reflection in the chapter by Christian Siefkes. The difficult question of the view of human nature implied in these "communicative imaginaries" is discussed in the trialogue between Habermann, Meretz, and Siefkes.

(c) A third and final possibility is, at present, most often glimpsed in the fanciful discourses on 3D printing technologies. In this case, the elimination of the exchange economy (that is, capitalist production) is conceived of in quite different terms. This is not about digitally facilitated barter as in a), or about converting the paradoxical mode of production which is on the one hand individual, and on the other hand indirectly mediated by society, into one that is social from the start, as in b). Instead this is about overcoming exchange (and thus the market and money) by means of a form of production that is still individual, but is no longer merely partial, but omnipotent. What does this mean? Under market conditions, every producer must exchange in the market (especially those who can only sell their labor), since it is only possible, individually, to produce a certain, small portion of goods (the division of labor is often equated with the principle of exchange, although it would be entirely possible to imagine a division of labor arranged by democratic and communicative means). But if we had an "ideal machine of fabrication," which really could produce anything we wanted, on the spot, then we would no longer need to exchange on markets, and would therefore no longer need money—as in the science fiction television series *Star Trek: The Next Generation*, where just such an ideal production machine, the Replicator, exists (see the chapter by Annette Schlemm in this volume). Such a machine would virtually cancel out capitalism all on its own, but without requiring a new communicative form and infrastructure, i.e. a social *ex ante* organization (though it would give rise to new conflicts, for example over the ownership of the data needed for production—if these were to remain private property and scarce, then capitalism based on 3D printers would also be conceivable; the same goes for the necessary energy and raw materials). In this way a machine can overcome the existing form of society—seemingly by itself, and without the effort of political education, debate, struggle, and the reconstruction of subjectivity. This "technological imaginary" may well be the main reason for the popularity of post-capitalist utopias based on 3D printing. For example, Jeremy Rifkin (2014, 7–26) argues that the expansion of 3D printing (and of other technologies such as the "internet of things") will inevitably lead to the expansion of the

"collaborative commons," and thus to a largely peaceful retreat of capitalism (see also the discussion of Rifkin in the text by Friederike Habermann).[5] It remains to be seen whether these three options really are separate, or are perhaps phases and parts of a transformation that is already taking place (see the chapter by Aigner and Scholz-Wäckerle).

The volume begins with a literature review by Lars Heitmann, giving an overview of the wide-ranging theoretical debate about money, but also outlining numerous practical initiatives in which the attempt is being made to produce and live without money.

This is followed by a first part considering money in theoretical and historical terms. Various concepts are discussed (though inevitably not all of them, cf. Ingham 2005)—in particular a process highlighted and criticized by Marx: the naturalization of separate, private production, which makes money seem so indispensable (chapter by Lohoff from the perspective of the critique of value). The next chapter discusses the assumption that money has its origins in debt relations (Kohl). On the one hand, as mentioned above, this is a necessary corrective to the hypothesis that money emerged peacefully from relations of exchange that had always existed. On the other hand, we would then have to ask, self-critically, whether a post-monetary society would not also be a society without obligations—which initially seems difficult to imagine (though the chapter by Stefan Meretz examines this point and outlines an alternative). This is followed by a "trialogue," that is, a deliberately multiperspectival discussion exploring whether money is to be defined as a commodity or as a medium. This question is relevant because it leads to the bigger question of whether and to what extent money can be made superfluous not only by other forms of organization, but perhaps also by alternative technological developments. If we assume that there is no form of society without technology, and no technology without a social form, i.e. that technology is not neutral, and is co-constitutive with forms of organization, then institutional and technical aspects must always be borne in mind. The chapter by Aigner and Scholz-Wäckerle, which concludes the section on money, examines this technological/institutional nexus of money, with reference to the current debate.

The stand-alone chapter by Annette Schlemm investigates the extent to which ideas of post-monetary forms of organization can be found in utopian literature and science fiction. These discourses are by no means "mere entertainment," but indicate that there have always been social self-descriptions or "socio-technical

[5] See also Schröter (2015). For a critique of reductive techno-utopian ideas see also Fischbach (2017).

imaginaries" (cf. Jasanoff and Kim 2015) calling into question the apparently natural character of money. Such models—which can be extraordinarily popular, as in the case of *Star Trek*—offer a starting point for bringing new fluidity to rigid thought processes.

The next part, "Mediation After Money," is (more) concerned with the institutional part of the technological/institutional nexus that is money. To begin with, Christian Siefkes—himself an active participant in the commons debate—identifies the historical and theoretical problems raised by overly naive critiques of money and the correlating implications. Stefan Meretz then takes up the debate about the commons (cf. Ostrom 2009), examining in detail possible categorial conditions for a commons-based, post-monetary form of production. Next, Friederike Habermann also discusses commons-based peer production, but pays particular attention to the problem of gender asymmetries linked to the relationship between production and re-production (or care). The subsequent trialogue discusses the supposedly over-optimistic view of human nature underlying the commons-based form of production, one of the most popular objections to a commons-based form of production. This brings us back to the question of anthropological aspects of monetary and post-monetary or non-monetary production, already touched on in Aufderheide-Kohl's chapter.

The final part—"Mediality After Money"—shows its proximity to the previous part—"Mediation After Money"—in its title, but shifts the discussion to (medial and) technological aspects. This part begins with a text by Peter Fleissner, who, from a Marxist perspective, brings together data intended to show that the commodity form and thus the money form are already on their way to being overcome, due to technological developments. He also discusses studies on new models of economic planning, which build on new computer technologies, promising to make markets—and thus, in principle, money—obsolete. The role of new computer technologies is at the center of the whole last part, which explores the hypothesis that these technological changes do not lead, deterministically, to other and "better," "post-monetary" conditions, but that they at least shake up the existing conditions (see the endless excited discourses on "Industry 4.0"), and make other forms of organization theoretically conceivable. With this in mind, Stefan Heidenreich examines economics as a network problem, discussing to what extent algorithmic and "smart" digital technologies might allow resource allocation without the mediation of money. The last chapter in this part revisits the "socialist calculation debate" of the 1920s and 1930s, and, reading certain key texts by Friedrich von Hayek in the light of media theory, Jasmin Kathöfer and Jens Schröter discuss whether the problem of knowledge he outlines—which has been seen as a decisive argument against, at least, central planning—is still valid under the

conditions of mobile, distributed, trace-forming media, or whether the accumulation of information might instead constitute the basis for decentralized planning (beyond the market and the state, and thus able to be meaningfully linked with the commons debate from Part 2).

The volume concludes with a critical but sympathetic commentary by Anitra Nelson, who can be seen as a pioneer in the debate about post-monetary forms of organization (cf. Nelson and Timmermann 2011). Her outside perspective highlights the blind spots in our discussion, and new paths for further discussions.

The project "Society After Money" sees its work—between (heterodox) economics, sociology, commons theory and media theory—as helping to start a dialogue that will shake up entrenched positions. Money does not grow on trees, it is not something natural, it has a beginning, and can perhaps also have an end, or at least change its form. It is not unimportant to point out that we did not wish to discuss (except in passing) the perspective of transformation, that is, how we can move from the present to a (possibly desirable) post-monetary future. We were only concerned with whether a post-monetary mode of production and way of life is imaginable. The project gave rise to some heated debates, and not all the differences and problems were able to be resolved—but perhaps this is inevitable for such a topic, and perhaps such a resolution is not even desirable. In any case we have tried to do justice to the internal dynamics of the volume through the somewhat unusual form of the book.

Our thanks go to the Volkswagen Foundation for the generous and flexible funding of the project, to Nicole Zöllner for her indispensable contribution, and to the administration of the University of Bonn, especially Dagmar Ogon, for supporting the project. Thanks also to Peggy Denda and Luisa Glees for their painstaking editorial assistance. We hope that our project can inspire further discussions. Anitra Nelson thanks all the other contributors to this volume, and Terry Leahy (University of Newcastle, Australia), for offering valuable feedback on the original draft of the Afterword.

References

Colander, David, Richard Hold, and Barkley Rosser (2004), "The Changing Face of Mainstream Economics," *Review of Political Economy*, 16, 485–499.

Dobusch, Leonhard and Jakob Kapeller (2012), "Heterodox United vs. Mainstream City? Sketching a Framework for Interested Pluralism in Economics," *Journal of Economic Issues*, 46, 1035–1057.

Fischbach, Rainer (2017), *Die schöne Utopie: Paul Mason, der Postkapitalismus und der Traum vom grenzenlosen Überfluss*, Cologne: Papyrossa.

Graeber, David (2011), *Debt: The First 5000 Years*, Brooklyn, NY: Melville House.
Ingham, Geoffrey (2005), *Concepts of Money: Interdisciplinary Perspectives from Economics, Sociology and Political Science*, Cheltenham, UK: Elgar.
Jasanoff, Sheila, and Kim, Sang-Hyun (2015), *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power*, Chicago and London: University of Chicago Press.
Le Goff, Jacques (2011), *Money and the Middle Ages: An Essay in Historical Anthropology*, Cambridge: Polity Press [*Le Moyen Âge et l'argent: essai d'anthropologie historique*, Paris: Perrin].
Mirowski, Philip (2014), *Never Let a Serious Crisis Go to Waste: How Neoliberalism Survived the Financial Meltdown*, London: Verso.
Neiser, Birgit, and Ralf Butschkow (2000), *Max macht Mäuse: Der Geld-Ratgeber für Kinder*, Kempen: moses.
Nelson, Anitra, and Frans Timmermann, eds. (2011), *Life without Money: Building Fair and Sustainable Economies*, London: Pluto Press.
O'Neill, John (1996), "Who Won the Socialist Calculation Debate?" *History of Political Thought* 17, 431–442.
Ostrom, Elinor (1990), *Governing the Commons: The Evolution of Institutions for Collective Action*, Cambridge: Cambridge University Press.
Ostrom, Elinor (2009), "Beyond Markets and States: Polycentric Governance of Complex Economic Systems," Nobel Prize Lecture, Stockholm. Available online: http://www.nobelprize.org/nobel_prizes/economic-sciences/laureates/2009/ostrom_lecture.pdf (accessed June 29, 2017).
Rifkin, Jeremy (2014), *The Zero Marginal Cost Society: The Internet of Things, the Collaborative Commons, and the Eclipse of Capitalism*, New York: Palgrave Macmillan.
Schröter, Jens (2015), "Der 3D-Druck und der Kapitalismus," *Sprache und Literatur*, 115/116, 106–118.
Schröter, Jens (forthcoming), "Digitale Medientechnologien und das Verschwinden der Arbeit," in Caja Thimm and Thomas Bächle (eds.), *Mensch und Maschine: Freund oder Feind?* Wiesbaden: Springer VS.

Part 1

A Society After Money? Historical Position, Characteristics and Perspectives of Current Approaches to Post-monetary Economic Activity

1

A Society After Money? Historical Position, Characteristics and Perspectives of Current Approaches to Post-monetary Economic Activity[1]

Lars Heitmann

The earth is a madhouse. And yet the knowledge humanity has attained so far could make it a paradise. For this to happen, though, global society would have to come to its senses.

Joseph Weizenbaum

Introduction

The current phase of societal development—which the different self-descriptions of society refer to as, for example, "postmodernity," "globalization," the "information society," "financial-market capitalism" or "turbo capitalism" — is characterized by multilayered crises. This crisis-prone nature is demonstrated on the one hand by objective facts such as rates of economic growth, or shifts in the relationship between economic and political institutions, discernible from the constant pumping of fresh money into the

[1] This introductory chapter is a much-abridged version of a study carried out in the framework of the project, on the crisis dynamics of neoliberal capitalism, and the problems inherent in market-oriented/money-oriented attempts at crisis resolution on the one hand, and emerging post-monetary approaches to economic activity on the other. My thanks go to all those who contributed to the development of the text: the authors of the present volume, the participants in the colloquium of the Gesellschaft zur Förderung sozialökonomischer Handlungsforschung e. V. (Social-Economic Action Research Institute, SEARI) (Michael Danner, Manfred Hilke, and Stephan Meins, and especially Arne Hilke for his comments and terminological clarifications, and for pointing me toward Günther Anders). Thanks also to Holger Heide, Athanasios Karathanassis, and Melanie Rippe.

markets by many central banks, or more generally, from the power of the economy in relation to the political sphere (and thus "society"). On the other hand, above and beyond this, it is demonstrated by subjective perceptions: that this "system" demands a great deal from the individual, but gives (too) little, that hard work no longer pays off, or that expectations can no longer be met. It is also evident in the perception that even consuming and having a lot only has a limited impact on individual "happiness." Another important factor is that many people (now) find it impossible to overlook or accept the ecological and social consequences of the current system.[2]

These objective facts and subjective perceptions have given rise to widespread debates about the direction in which society (that is, the economy) should develop in the future. These debates prove, on closer inspection, to be extremely diverse: while on the one hand there is discussion of familiar right-wing, liberal or social-democratic approaches (which all see reform of the *existing* monetary system as the solution), on the other hand there are approaches that aim at different ways of generating and using money (e.g. the abolition of deposit money creation or interest), and, going beyond this, approaches that are unwilling to follow either "reformist" or "alternative" paths, and try to find solutions *beyond money*.[3]

What is striking is that the "alternative" debates and approaches, and sometimes even the more fundamental ones focused on something "beyond money," are no longer a sideshow put on by eccentrics and freaks, but are

[2] See the large number of empirical studies, some of them representative, which indicate that the "paradigm" of "capitalism" seems unattractive to many people. See the current surveys by YouGov (https://yougov.de/news/2017/08/24/mehrheit-sieht-kapitalismus-krimehrheit-sieht-kapi, and https://yougov.de/news/2016/02/24/der-sozialismus-hat-deutschland-einen-besseren-ruf), as well as the Harvard IOP Spring 2016 Poll (http://iop.harvard.edu/youth-poll/harvard-iop-spring-2016-poll). See also Institut für Demoskopie Allensbach 2012; Pew Research Center 2012; Bertelsmann Stiftung 2012; BBC 2009. All the internet sources mentioned above and in the following were last accessed on December 12, 2017, unless otherwise noted.

[3] See the current flood of publications on the subject of "post-capitalism" in general and moneyless economic activity in particular. For "post-capitalism" see, among others, Wright 2010; Mason 2015; Misik 2016; Creydt 2016; Frase 2016; Srnicek and Williams 2015, 2013; Marxistische Abendschule Hamburg 2015; Eversmann 2014; Rifkin 2014; Bender et al. 2012; Zelik 2011; Wallerstein and Müller 2010; Gibson-Graham 2006a and b. For moneyless economic activity see, among others, the sources cited in the second part of the present study. A more general, sociological reflection on the present need for post-monetary economic activity, and on the conditions and basic principles of such activity, can be found in Stengel 2016. For an insight into the spectrum of alternative economic approaches see Wright 2010, chapters 6 and 7; Konzeptwerk Neue Ökonomie e. V. and DFG-Kolleg Postwachstumsgesellschaften 2017; Voß 2015; Notz 2012; Adler and Schachtschneider 2010; Habermann 2009; Ressler 2008. In the People's Republic of China, consideration is currently being given to the use of "big data" for the re-establishment of centralist practices based on a planned economy (Konicz 2017).

also followed and even supported by the political system and the business world.[4]

Since the attempts at an alternative monetary economy have so far been demonstrably unconvincing, both theoretically and practically, the field of moneyless alternatives has become a particular focus of interest.

The spectrum of approaches to post-monetary economic activity currently up for discussion proves to be extremely diverse: we find a wide range of approaches such as attempts by individuals or small groups to live without money, based on notions of the "free economy"[5] or "self-sufficiency," and thus linked with very varied concepts of production; anonymized urban "free economies" (of production as well as distribution and use); global "virtual," "networked" "free economies"; small-scale "subsistence" lifestyles, here again associated with widely differing concepts of production; a "high-tech planned economy" conceived in global terms, leaning toward either democracy or a highly centralized expertocracy or technocracy; technology-oriented "free economies" with highly decentralized but globally integrated concepts of reproduction, and more. In other words, we find things as diverse as "opting out" or living "off-grid," open municipal/communal gardens, moneyless rural communes, global "free software communities," "makerspaces" or far-reaching visions of a "cybersocialist" society. These different organizational concepts are, in turn, linked with very diverse worldviews and values, from broadly esoteric or conservative attitudes to ultra-liberal ones.

In order to introduce the subject and prepare the way for the subsequent articles in the volume, this chapter aims to define the overall socio-historical position of the very diverse post-monetary approaches that exist today, to

[4] Here we can point to the appointment of Jeremy Rifkin as an advisor to the European Commission; to the numerous publications and research projects on "commons," "alternative economics," "urban agriculture" etc., by both public and private organizations, including the present project; to the awarding of the Nobel Memorial Prize in Economic Sciences to Elinor Ostrom for her theory of "commons"; to UN resolution 61/295 ("United Nations Declaration on the Rights of Indigenous Peoples"); to statements by experts who can be seen as belonging more to the bourgeois/conservative camp, such as Christoph Keese, vice president of the conservative German Axel Springer Group, who observes that "cybersocialism" is certainly possible, though not desirable (http://www.presseschauder.de/interview-mit-der-jungen-welt-digitaler-sozialismus-ist-denkbar-aber-nicht-wunschenswert); to the debate about cybersocialism in the *Financial Times* (https://www.ft.com/content/6250e4ec-8e68-11e7-9084-d0c17942ba93); to the publication of Bini Adamczak's (2017) introduction to "communism" at MIT Press, and to publications by the Bundeszentrale für politische Bildung (Federal Agency for Civic Education) (2015). Public service media have also featured a large number of related stories, particularly on living without money.

[5] When the term "free economy" is mentioned below, it refers to all those approaches that are geared to voluntary and gratuitous give and take ("Umsonstökonomien" in German). This does not mean the "free market economy."

present them in their diversity in a systematic and problem-oriented way, and lastly to reflect on their prospects for development in terms of a possible "society after money."

I will begin by showing that the aspiration to moneyless economic activity does not seem at all absurd based on the current state of research. For one thing, it can be assumed that it is only *in capitalism* that money plays an essential role, i.e. one that shapes economic reproduction in the narrow sense and society as a whole, and that there is therefore scarcely any plausible justification for the need to use money, especially in the specifically modern form (1.1). For another thing, it is evident in many ways that even within the reproduction of the economic system that has evolved with the triumph of capitalism in the modern age, various non-monetary forms of reproduction are enormously important, contrary to all dogmas about the need for the market (1.2). Considering these often-overlooked areas of present-day reproduction draws attention to the existence, in the realms of the "subsistence economy," of other attitudes and social rationales than those shaped by the monetary economy. These are also often overlooked (in everyday and political practice as well as in academia). According to the view of post-monetary approaches based on the "subsistence economy," however, we need to identify and generalize these, i.e. make them the basis for the reproduction of all areas, including those that are now (still) organized on a monetary basis (1.3).

In the second section, building on this basic positioning of post-monetary economic activity, I give a systematic overview of the current approaches to post-monetary economic activity, that is, those approaches that *deliberately* attempt to expand moneyless practices of reproduction (2). Here I initially explore the specific contemporary preconditions for the development of such approaches (keyword: "postmodernity"), in order to understand the diversity of their current forms. I attempt to cut a path through the jungle of different approaches by distinguishing between differing degrees of division of labor (2.1). Against this background, I present a few selected approaches as examples of each tendency, while also taking into account the problematic aspects raised in the debates (2.2). The chapter ends by considering possible developmental prospects for post-monetary approaches (3).

Since this is intended as a general introduction to the topic of the volume and the subsequent articles, my main aim here is to paint a broad overall picture of the field. In cases of doubt, the presentation therefore tends toward breadth rather than depth: many things that would merit detailed examination can only be dealt with superficially here.[6] This also applies to the (technical) terminology cited.

[6] Except in the case of verbatim quotes, the references cited are intended as suggestions for further study. The longer reference list can therefore be used as a reading list or as a guide for further reading.

1. With Money and Without Money: Yesterday—Today—Tomorrow

For centuries now, explorers have been trying to find this fabled land of barter—none with success.

David Graeber

1.1 Money as a Special Form of Economy

In economics and sociology, universalist statements have often been made about the economic life of humans: general assumptions about the rationality of economic behavior (*Homo oeconomicus*), and assumptions about general forms of economic practice (exchange), and structural or functional principles of the economy (the division of labor, "economy as the communication of scarcity," or the "adaptation of society to the environment"). Such universalizations always suggest that economic attitudes and forms of organization which are dominant today are completely "normal," or even "natural"—and therefore that things *cannot* actually be different from what they *are*. Yet such universalizations have been criticized and refuted in various ways in contemporary research, thus raising the possibility that things could be *completely different*, that people could follow totally different orientations in the reproduction of their lives, and could organize themselves quite differently from the way they do today.[7]

This also applies to money, a central phenomenon in today's economy, and to the academic study of this phenomenon. These have also been increasingly subjected to critical research, and the critical examination of money has given rise to critical perspectives on the above-mentioned general assumptions about the rationality, organization, and structure of economic activity.

For example, it was a long-held belief that money had its origins in the exchange of goods for goods, as a way of simplifying this, and that humans had a "natural propensity" for exchange. Today this belief is increasingly being called into question:

- Today there are a large number of studies with a focus on economic history which show that money did not develop, historically, from barter, but was constituted under specific social, cultural and psychological

[7] For a critique of generalizations on economic activity see Gibson-Graham 2006a and Polanyi 2001.

conditions as a relation of obligation.[8] Thus money cannot simply be regarded as a "medium" with equalizing or otherwise emancipatory effects, as is often still the case; instead its institutionalization and generalization are always associated with constellations of domination and dependency.

- The historically oriented explanations for money and other relevant research on economic history also make it clear that the use of money, especially in its present ubiquitous form, is not a constant of human history; on the contrary, if we look back on the (currently accepted) 160,000 years of development of *Homo sapiens*, it is a historically recent phenomenon. The development of money can be roughly outlined as follows.[9] Before the emergence of coined money from about 800 BC, various forms of non-monetary exchange existed: ritual exchange, barter, and primitive money or commodity money (these last since the Neolithic period, from about 6000 BC).[10] In some cases, diverse and extensive relations of exchange did develop in connection with these forms of exchange, but in societies where these forms of exchange occurred, exchange remained, overall, a fairly marginal phenomenon with regard to the reproduction of people or collectives. Or at least: things were not (primarily) produced *for exchange*, but subsistence remained the basis of these societies. Thus even high cultures that did not yet use coined money generally developed complex relations of exchange, but these were ultimately based on subsistence, contributions in kind, and personal relations of exploitation. Even societies which developed coined money and extensive trade relations (China, Lydia/Greece, Rome) only used this money to a limited extent. Here too, the basis was still subsistence, and most people remained peasants and/or slaves. With the end of the Roman Empire and the development of the feudal system in Europe, the use of money actually declined, and only

[8] See the relevant studies by Heinsohn and Steiger; Martin; Wray and Graeber. Detailed references to these can be found in the chapter by Aufderheide-Kohl in this volume. Türcke 2015 and Brodbeck 2012 also argue against the derivation of money from exchange in their detailed historical analyses.

[9] As far as I can see, there has as yet been no account that comprehensively reconstructs the extent and significance of exchange and money in human development. I base my account on Davies 2016; Herrmann 2015c; Boldt-Mitzka 2015; Graeber 2011; Wray 2012; Le Goff 2012; Pirenne 2009; Mikl-Horke 1999; Bleiberg 1995; Crone 1989; Bauer and Matis 1989; Polanyi 2001; Dalton 1971. The brief overview by Impulszentrum Zukunftsfähiges Wirtschaften [n.d.] is also informative.

[10] Since primitive/commodity money was sometimes strictly linked with specific purposes, Dalton (1982) even argues that the term "money" should not be used for these.

gradually expanded again in the course of the Middle Ages.[11] Only from the sixteenth century onwards, with the transformation of labor and land into commodities, did extensive money-based economic contexts develop ("capitalism").

This shows that, historically, the extensive use of money is a very recent phenomenon. The distinctive nature of the money used in this context, however, can be explored not only in historical but also in *structural* terms. In social science research on money, for example, the structural difference between *pre-capitalist* and *capitalist* money becomes apparent in various ways.

- From the perspective of a Marxist critique of political economy, it becomes clear that *today's* money, in contrast to all other historically existing forms of money, is not only "obligation" or "debt," but is always already *capital*, and that the use of money only occurs in connection with the historically specific social power relation that underlies this use: the exploitation of working non-owners by non-working owners, on the basis of free contracts between formally equal legal entities.[12] Here work and production no longer take place for the immediate satisfaction of needs, but for exchange, that is, for purposes of buying or selling. Whether or not they take place depends on whether the purpose of pecuniary gain is fulfilled, and ultimately on whether the sum of money invested as capital becomes more money. Here money always embodies this underlying production relationship, and the *structural* social relationship of economic value which it creates. It should be stressed here that it is only under the condition of this specific power relation that money *first* ceases to play a merely secondary role in the satisfaction of needs, and that the acquisition of money becomes the universal prerequisite for life (Polanyi 2001). It is *only now* that the economy develops as an overall context in which *all* individuals relate to each other (via the universal principle of private property, the

[11] Le Goff (2012), who emphasizes the limited significance of money in the Middle Ages, points out that people in this period did not yet have a term for "money" in the proper sense.

[12] For a current reading of Marx see the volume by Mosley 2005. Marx (1872) speaks of the double freedom of the wage-laborer: the worker is free to enter into contracts, but at the same time also free from the "means of production." It should be noted here that such a contract is always between a mouse and a lion, so to speak (Adorno): one cannot *not* enter into a contract, and the contract is always with a powerful "partner." It should also be noted that the term "exploitation," in connection with the wage-labor relationship, refers to the social production and private appropriation of "added value," and is therefore not an ethical category relating to exceptionally "unfair" behavior on the part of capitalists.

global division of labor, and universally comparable prices).[13] And it is *only now* that people can and must behave in a *thoroughly* selfish and calculated way toward each other.

- One aspect of (modern) money, defined as capital, is that acts of exchange take place as elements of an overall system of interlocking circulations of capital (Pahl 2008: 15f., 152). This includes a functional relationship between different forms of capital, with credit as a central component of the system as a whole. Given society's focus on the acquisition of money, and the linking of this acquisition to the generation of profit, credit inevitably develops into a core element of the functional context of capitalism (Heinrich 2003), even if it is only for fundamental investments or those made for reasons of competition, which cannot be financed from available funds or purely from profits.
- Another aspect of the *special, structural* power relation arising from this is that "economics" develops an independent existence as a socially objective functional context with its own "dynamics." The "anarchy of commodity production" (Friedrich Engels) emerging with the development of capitalism brings with it *objective* monetary phenomena such as inflation, specific growth parameters and crises, phenomena that are not deliberately created by anyone, but are the precondition for all economic actions, and are in turn a reflection of capital's new, independent existence as an "automatic subject" (Marx).[14] This increasing independence is reproduced in and through action.[15]

[13] In the context of economic sociology, this *universal* social context, which only develops in capitalism, is distinguished from smaller-scale forms of organization: "[N]either traditions and institutions, nor organizations, networks or power compare even remotely, in terms of their timescale or their level of spatial and social universalization, with the degree of global integration of chains of action mediated by money. Social networks can [. . .] only have an impact on the behavior of directly interacting market participants, but have no influence on market development, as long as it is determined by 'third parties,' 'fourth parties' etc. who are not directly involved. But these anonymous third parties and other participants are always present in market development, often in overwhelming numbers, despite all efforts to organize the markets, and they cause socially uncontrollable chains of events. In slightly overstated terms: if the mood at the New York Stock Exchange suddenly deteriorates, millions of small farmers in Indonesia are ruined, or labor costs for German industry rise to an intolerable level because of changing exchange rates. The supremacy of money over the spheres of organization, politics and law results from the fact that, in contrast to these, it is the only real 'global' system: it not only encompasses the whole world, but also pervades it into its remotest corner" (Deutschmann 2001: 132).

[14] For this form of "anonymous domination" see also Elbe et al. 2012.

[15] This is a core idea of the Marxist critique of political economy, and of the critical theory based on this (Horkheimer, Adorno, Marcuse, Neumann).

- At the same time, this new independent existence of the economic has a specific *societal* dimension, which is often identified in sociology, and which constitutes a further specific social quality of *capitalist* society: the economy not only becomes independent *in itself,* that is, in the form of unintended dynamics resulting from the intentional economic actions of individuals, but at the same time it becomes independent of (or in sociological/functional terms: "differentiated" from) "society" (Habermas 1987; Polanyi 2001).
- This historical process by which the economy acquires independence or is differentiated from society proves to have weighty consequences: with the "institutionalization of the medium of money" (Habermas) and the associated differentiation between the economy and society, society as a whole is "flying blind" in both economic *and* socio-cultural terms.[16] Not only does the (systemic) development of the economy determine the economic and political options; the development of social norms and individual identities also *ultimately* remains bound to the "valorization of value."[17] This "valorization of value" leads, as history has shown, to the often demonstrated dynamics of "marketization" (*Ökonomisierung*), to the huge ecological, economic, social and individual dislocations that go with it, and so, finally, to the question of possible alternatives.[18]

Capitalist money thus proves to be not only a historically distinct phenomenon, but also a core component of a qualitatively new form of social coexistence.

With these insights into the *historical* and *qualitatively new* character of money, the question of economic alternatives—a key question for movements critical of capitalism—now presents itself in a specific way: on the one hand, the insight into the historical characteristics of money opens our eyes to many *other* possible uses and forms of money. On the other hand, the structure-oriented perspective on money allows a critical examination of reformist approaches to growth and money (in particular, the reformist ideas focused on ecology and a critique of growth which are prominent today),

[16] This metaphor appears in the work of authors as diverse as Robert Kurz, Norbert Bolz and Harald Welzer.

[17] Habermas (1987: 155) speaks of a "heightening of systemic complexity, which becomes so hypertrophied that it unleashes system imperatives that burst the capacity of the lifeworld they instrumentalised." For the economy's fundamental stranglehold on the social in modern society, see Schimank 2008.

[18] For the analysis of current forms of marketization see Crouch 2015; Brown 2015; Sandel 2012. For the development of "multiple crises" see e.g. Cairó-i-Céspedes and Castells-Quintana 2016; Demirović et al. 2011; Fotopoulos 2005.

approaches based on a critique of interest, and approaches aiming at the abolition of deposit money creation. All these approaches retain the idea of money as a general means of exchange, and face, each in their own specific way, a virtually insoluble problem.[19] A few key objections (out of many more) are summarized here:

- Growth cannot be simply slowed down, let alone stopped: either the economy grows or it shrinks chaotically.[20]
- Interest proves to be an essential element if money is to function as a *general* means of exchange: no interest → no profit → no exchange.[21]
- In itself, the containment or abolition of deposit money does nothing to change the function of money as capital, and can therefore do little to prevent crises (and inequality).[22]

If we assume that the objections to reformist ideas are justified, then it seems plausible at present to consider a de-monetarization of the economy rather than reforms of the growth model or of the use of money. But in light of the diverse ways of life that exist in today's developed capitalism, this leads to a further question: What could a de-monetarized, i.e. a post-monetary economy be like? What forms of coordination and social organization can be imagined, under present-day conditions, if money ceases to exist or is reduced to a minor role?

Before we turn to the possible answers that are given to this question, I think we first need to consider another aspect of the distinctiveness or limitations of money as a form of economic practice: the "blind flight" described above, driven by monetary considerations and organized along monetary lines, and unique in the history of humanity, must not hide the fact (as often happens in economics and the social sciences) that the imposition and perpetuation of the newly independent "system" has always been attended by a number of non-monetary practices.

1.2 Capitalism and Non-Monetary Reproduction

The phenomena of monetarization, in principle of labor and land, and subsequently in the form of the ongoing "commodification" of all possible

[19] Some fundamental arguments against various approaches to monetary reform can be found in Busch 2016; Weber 2015; Exner 2014; Bierl 2012; Altvater 2012, 2004.
[20] See Herrmann 2015a and b; Deutschmann 2008: 50ff.
[21] See Exner 2014; Altvater 2004. Altvater (2004: 35) stresses: "One cannot abolish interest without overcoming capitalist society."
[22] See Weber 2015.

needs, prove to be only one side of capitalist development: on closer examination, it turns out that the modern production system has always been a combination of monetary and *non*-monetary forms of practice.[23] This has various implications:

- The system of the "valorization of value" is based on and preserved by force, in some cases extremely brutal, even utterly inhuman violence. This includes the violent appropriation of spaces and resources and the enslavement and exploitation of people, especially in the "global South."[24] In this context it should not be overlooked that capitalism can only function if exploitable (that is, skilled and willing) workers are available (Heide 2009: 11ff.; 2007a: 39ff.). Now and in the past, it has been necessary to create these conditions, sometimes with extreme brutality (Heide 2009; Kurz 1999). The modern school system can also be understood as a way of forcibly producing people who are willing and able to work, and who fit into the given functions of the division of labor (Huisken 2016).
- In capitalism, women are exploited through unpaid housework and care and the raising of children: their domestic work ensures the production and reproduction of the "commodity of labor" or of "work capacity," and usually also involves forms of oppression by their husbands (Bauhardt 2015, 2012). This area of so-called "social reproduction" essentially comprises "housework" and "care work," which have a low status in society and/or are taken for granted. "Care work" also includes care for the elderly and the sick, that is, people who are not fit (or no longer fit) for work.[25] The work that is done here makes up a substantial part of the total amount of time spent working in society: "In the Federal Republic of Germany in 2001, the time spent on the work of reproduction, with a total volume of 96 billion hours, was 1.7 times greater than the 56 billion hours spent on paid work . . . 61 percent of this work was carried out by women" (Winker 2015: 19).[26] And the following critical remark is added to these official statistical findings:

[23] Here it must be made clear at the outset that the non-monetary practices cited in the following section do not necessarily contain prospects for an alternative society.

[24] Gerstenberger 2017; Brand and Wissen 2017; Reinhard 2016; Hartmann 2016; Lessenich 2016; Chomsky 1993; Davis 2001; Harvey 2003; Chossudovsky 1997.

[25] I think it would be better to speak of "activity" than "work," to make the non-remunerated form of these activities clear. L. H.

[26] For current data see Statistisches Bundesamt 2015a and b.

> The figure given here for the work of reproduction underestimates the actual volume, since this study concentrates on housework and care work in a narrow sense; many tasks in the area of education and health are not covered. Thus housework and gardening, cooking and washing up, cleaning, laundry, looking after pets and plants, shopping and household organization, supervision and care of children and adult members of the household, and voluntary activities are included. Not included, however, are activities such as lifelong learning and maintaining physical fitness, which are becoming increasingly important if one is to remain active as a wage earner.
>
> ibid.

With a view to the total worldwide amount of work, even rough estimates assume a substantial proportion of the measured "reproductive" activities: "According to researchers' estimates, the care, child-raising, household and subsistence work carried out primarily by women makes up two thirds of all activities globally. This is the biggest Oikonomia sector on earth!" (Scheub 2015: 11).

- The perspective of "social reproduction" offers another way of looking at forms of life in capitalism which are organized in non-monetary ways: what is known as "subsistence."[27] This refers in a very general way to the existing non-monetary forms of practice:

> Subsistence is understood to mean self-sufficient do-it-yourself work. Subsistence economy does not have to be organized individually or in families, it could also involve whole regions. This encompasses networking. The essential criterion . . . is that earning one's living does not involve the medium of money, and that mutual provision of the means of survival largely occurs without exchange.
>
> Habermann 2009: 32

"Social reproduction" in the narrow sense thus constitutes *one* area of "subsistence," but subsistence goes beyond this. It also includes forms of rural self-sufficiency in the "global South" and forms of "subsistence economy" in the cities (especially of the "global North"), which in some cases go beyond the domestic/familial realm:

> Over thirty percent of the world population still live off the land, i.e. they produce many goods themselves, for their own needs and for

[27] For a detailed discussion of the form and extent of "subsistence" in capitalism see Boldt-Mitzka 2015: 17ff.

> those of the local community, but also achieve surpluses in products and services, with which they supply the surrounding area via local markets. This is the *rural* subsistence economy . . .
>
> Of equally great importance is the *urban* subsistence economy. It consists of household and family work, making one's own commodities, doing repairs, or even building one's own home, helping neighbors, working in clubs and societies, and carrying out voluntary activities to provide common goods; but also gardening or keeping small animals. In cities worldwide, a large and ever-increasing number of people are growing their own vegetables and keeping poultry and small animals. *Urban subsistence* has become a new buzzword.
>
> Scherhorn et al. 1999: 1[28]

Here too, non-market activities have been shown to make up a very large proportion of all activities, in Germany and worldwide:

> For Germany, the Federal Statistical Office has calculated that nearly two thirds of all working hours are spent on subsistence work; paid employment makes up only the remaining third. In other industrialized countries it is similar. If we include the countries with an even greater proportion of subsistence work, then at most one fifth of all working hours worldwide are paid work.
>
> ibid.

- We also find other moneyless practices of reproduction, which—like the forms of "subsistence" in its narrower sense—are part of everyday life: barter, giving or lending something to someone else, doing someone a favor, sharing things or using them jointly.[29] Unlike "subsistence," which can always be viewed and measured in terms of working hours spent, these practices are virtually impossible to quantify in a useful way.

The diversity of the forms of economic reproduction, which has become apparent here, is also expressed in the image of the economic "iceberg." This offers a striking qualitative and quantitative contrast between the visible area traditionally associated with work and the economy and the often overlooked non-monetary and informal forms of economic activity (see Figure 1).

[28] For "urban subsistence" see Dahm and Scherhorn 2008.

[29] This can also be found in the representations of the diversity of economic forms of practice in Gibson-Graham (2008 and n.d.) and Gudeman (2001).

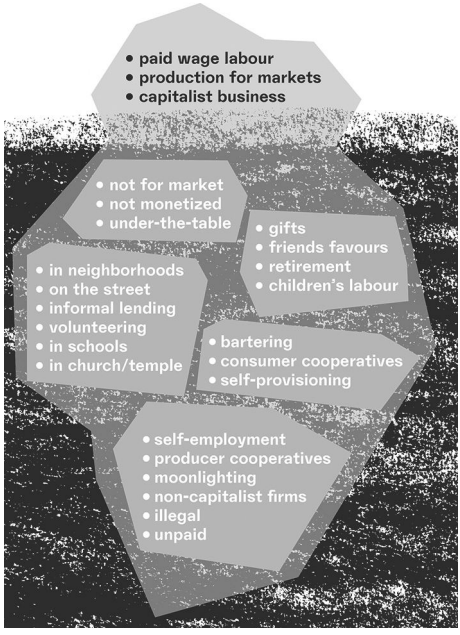

Figure 1 Gibson-Graham, Langdon and the Community Economies Collective in 2013.

Here non-monetary practices can be found not only in the form of strategies of violent appropriation, "social reproduction," "subsistence" in the wider sense and other relationships based on solidarity or altruism; they are also a self-evident component of the "logic of the market" and of corporate organization:

- In the context of debates about "marketization" etc., we must bear in mind that capitalist expansion also causes certain forms of monetary reproduction to disappear: over time, areas that were previously organized on a monetary basis cease to be organized in this way (to any great extent), for example if this is no longer economically or politically worthwhile. The consequences of such decisions are unemployment and income losses. Those affected are then no longer able to purchase things that they could previously buy, or they are once again obliged to make or do things for themselves (cleaning their own house instead of paying for help, cooking their own meals instead of going to a restaurant or buying ready meals etc.). It should be noted here not only that the non-monetary is an absolutely normal state of affairs, but that the

disappearance of the monetary also proves to be a completely normal process.[30]

- Debates about the natural and beneficial character of exchange frequently overlook an important fact: *in* the capitalist enterprises which are producing "for the market," what happens is not exchange, but *planning* (Chang 2010). What we have here are in some cases highly complex processes based on the division of labor, organized hierarchically or in pseudo-market-oriented ways. Today corporate "management" is often computerized, as are work/production processes.
- There is a tendency to outsource tasks from companies to consumers, without paying them ("working customers/consumers") (Rieder and Voß 2010). Many examples of this can be cited: self-service in restaurants, self-checkouts in supermarkets and gas stations, self-service ticket machines in railway stations, software updates carried out by consumers, the configuration of individualized products on the internet, and much more.

In summary, then, the imposition and perpetuation of the "market economy" proves, on closer inspection, to be an inherently contradictory process, a combination of diverse monetary and non-monetary practices and relationships.[31] The "system" owes its continued existence *in part* to *direct*, violent appropriation of (natural) "resources," and to *direct*, personal exploitation of human beings: i.e. to appropriation and exploitation that do not take place via the value-form. The many different forms of "subsistence" also prove to be essential or important contributions to the perpetuation of the capitalist "system." They create the "conditions of production," ensuring that people are able to work, fostering "social integration," and softening the impact of business-friendly/growth-friendly social policies and economic crises (Boldt-Mitzka 2015: 12f.). Ultimately, the "system" is not even consistently monetarized in immanent terms; rather, corporate reproduction involves multiple elements of de-commodification and planning.

In the debate about "economic alternatives," the area of "subsistence" is seen as especially important: it is regarded not only as a vital element in the

[30] It should be pointed out here that these are not just temporary effects which are (or can be) quickly corrected by the market. Instead this is a long-term structural phenomenon: in capitalism, unemployment is constantly being produced for systemic reasons. From a business perspective, unemployment is very much a useful phenomenon, as the existence of a "reserve army" (Marx) hangs over every wage negotiation like a sword of Damocles.

[31] In view of this characteristic of the contemporary economy, Gibson-Graham (2008 and n.d.) also speak of "diverse economies."

perpetuation of the "system," but also as a starting point for the development of a (completely) *different* economy. This is something we need to explore in greater detail when considering the possible make-up of a post-monetary economy.

1.3 "Subsistence": A Different "Social Logic"?

The "logic" of thought, action and feeling within the context of *capitalist* reproduction can be discerned in various forms of social relationship and individual orientations: in competitive relationships and strategic attitudes toward other people, in a focus on abstract values (money), in the ideologies and practices of dominion over nature, in the subordination of thought, action and feeling to general "constraints" (often including the experience of powerlessness), and in an indifference toward the economic, ecological, social and sometimes even individual consequences of personal or collective action—going as far as the willingness to use pure force (violent appropriation of spaces and resources, enslavement, war) to achieve one's goals.

Alternative perspectives not only make it clear, as seen above, that the spread of these attitudes has a specific historical character, i.e. it is a product of capitalism, and that the tendency to equate capitalism with exchange is ideological. They also show, in the debates about "subsistence," that the area of "social reproduction" or "subsistence" follows different and indeed opposite orientations to those that are dominant in the context of markets and business organization.[32] A number of aspects may be mentioned here:[33]

- Focus on needs rather than on abstract wealth (money)
- Cooperation and mutual help rather than competition and stratification
- Sharing rather than exchanging
- Communication rather than anonymity
- Mindfulness and care rather than heedless use
- "Live and let live," rather than living at the expense of others
- Frugality rather than excess
- "Intrinsic motivation" rather than "extrinsic motivation" (money, structural constraints)

[32] In light of this, Boldt-Mitzka (2015: 18) even considers it desirable to develop a new, more comprehensive theory of "modernization," one that does justice to both the substantial scale and the "different logic" of subsistence.

[33] I have compiled these aspects from Bennholdt-Thomsen 2011, 2010, 2006; Dahm and Scherhorn 2008; Mies 1994.

- Respect for the dignity of others rather than the reckless pursuit of selfish interests
- Empathy/care rather than indifference toward others

This qualitatively *different* "logic" of "subsistence," contrary to ways of thinking, acting and feeling within the capitalist process of exchange and production, *also* exists and *always has* done. It is older than capitalism and the ways of thinking, feeling and acting that developed with it. Yet its existence within capitalist society is not unmediated: it has always been embedded in the capitalist process of exchange and production, and thus dependent on it and (structurally) limited in its efficacy (Boldt-Mitzka 2015).

Moreover, the "different logic" of "subsistence" cannot simply be equated with "emancipation": it develops both in equal relationships between men and women and in queer and patriarchal forms of coexistence. It has never been bound to specific gender identities—in contrast to "essentialist" feminist views, which see "different logic" as the sole preserve of women.[34]

Approaches based on "subsistence economy" demand that this "different logic" be made the foundation of all economic activity, that is, that the areas currently (still) organized along monetary lines be reorganized according to "logics of subsistence" (Impulszentrum Zukunftsfähiges Wirtschaften, n.d.: 26f.).[35] Like many other alternative but not subsistence-oriented approaches, they often call for the return to "simple" lifestyles.[36] This sets them apart from a number of other approaches in the current debate about the development of a post-capitalist, needs-oriented, broadly "solidarity-based" economy, approaches that uphold the established division of labor and the associated way of life. Such approaches focus their efforts on developing elaborate technological procedures to allow the *moneyless* organization of complex contexts of production and distribution based on the division of labor.

The mention of this tension completes our rough outline of the various post-monetary approaches that can currently be observed. The following section aims to give a more precise overview of this field and further insight into it.

[34] For a critique of eco-feminist "essentialism" see Bauhardt 2012: 9f.

[35] Gibson-Graham (2008; 2006a and b) also see the diverse solidarity-based forms of practice existing alongside the (more narrowly defined) capitalist forms of economic activity as a starting point for the construction of post-capitalist forms of economy. According to Mies (2003), exchange/the market will at best play a subordinate role in the context of a future "subsistence economy."

[36] A representative example is Bennholdt-Thomsen 2015, 2010.

2. Cultures of the Post-monetary: A Glance through the Post-monetary Kaleidoscope

The undisputed mark and basic principle of a demonetized economy is, in any case, production for use rather than profit.[37]

Andrea*s Exner, Justin Morgan, Franz Nahrada, Anitra Nelson, Christian Siefkes

2.1 From Postmodern to Post-monetary Society

From the perspective of social theory, the development of moneyless ways of life can be understood as a de-differentiation of society. To use Habermas's terms: the newly independent economic "system" is brought back into the "lifeworld" ("society"), and as a result, *new* forms of "production" and "distribution," going beyond the various already existing forms of "subsistence," must be found and established. *What* is produced, and *how* it is produced and distributed no longer depends, as in commodity production, on private decisions in the form of money and its objective, crisis-prone dynamics; instead it is now the object of collective decision-making, freed from the "silent compulsion of economic relations" (Marx).[38]

The *current* development of approaches aimed at consciously shaping "economic reproduction" is taking place under specific social conditions, essentially those of a "postmodern culture" produced by historical forces.[39] It reflects the disintegration of "Fordist mass society" after the Second World War, and comprises various aspects, such as:

- the gradual dissolution of "status orientations," resulting from the establishment of "post-material values," according to which "fulfilment" and "happiness" are no longer primarily (let alone exclusively) dependent on economic success;

[37] In English, the distinction between "production for use" and "production for profit" is often used to name the qualitative difference between capitalist and non-capitalist economies. The German language allows a more precise conceptual distinction here. Thus, a distinction can be made between "Produktion" and "Herstellung," whereby the German term "Herstellung" can best be described as "creation." In the following, when the term "production" is used in the context of post-monetary approaches, this designates the (non-capitalist) creation ("Herstellung") of usable things that should not be sold for profit.

[38] Marx highlighted this opposition in *Das Kapital*, in the section about commodity fetishism. If there are "freely associated men," the distribution of the total work of society across the different branches of production occurs in a planned way—in contrast to the "anarchy of commodity production" (Engels) in capitalism—and is therefore transparent for humans (Marx 1872: 92f.).

[39] For a presentation of the core aspects of "postmodernity" see Zima 2016.

- the dissolution of bourgeois-conservative ideologies, also long shared by the increasingly bourgeois labor movement (patriarchal gender roles, belief in hierarchies, ideal of the nuclear family, need for individualism);
- a critique of consumerism, and with it a critique of mass production (especially with regard to its ecological and social consequences);
- a critique of the "ideology of growth," which is unable to keep its promises of freedom and prosperity *for all*, and increasingly proves to be socially and ecologically destructive;
- the acknowledgement of the legitimacy and (as a consequence) "re-establishment" of indigenous ways of life as part of the development of anti-colonial movements, and the self-relativization of Eurocentric worldviews;
- the rediscovery and acknowledgement of the legitimacy of traditional stores of knowledge and the expansion of this knowledge as people come to realize the impossibility of objective knowledge (but also the destructiveness of supposedly "progressive" scientific technology);
- the development of new ("alternative") worldviews, technologies, identities and forms of social relationship (in keeping with the above-mentioned relativizations);
- the need for "grassroots" democratic processes;
- in general: the acknowledgement of different needs, cultures and ways of life.

It must be stressed here that these postmodern aspects do not exist as a general counter-tendency; the ("Fordist") established system remains in place, and usually the different bourgeois-conservative and "alternative" elements are mixed.[40] In more precise terms, the translation of countercultural movements into new valorization strategies is almost becoming the signature of neoliberal capitalism.[41] Thus the overall picture that emerges for the "post-Fordist," i.e. neoliberal phase is that of a contemporary society that is both highly differentiated and ambivalent. This then forms the social background for the development of new post-monetary approaches.

[40] Sociologists have identified a "value synthesis" which has become dominant in society, made up of "traditional" and "progressive" value orientations (Keupp 2002; Klages 1993). Extreme present-day examples which could be mentioned are conservative or even right-wing environmentalists, (queer) feminist careerists; "LOHAS" who drive considerable distances in their SUVs to buy "healthy" and "fair-trade" products, whose overall environmental impact is, in turn, often questionable; "punks" who consume mass-culture pop products and live in nuclear families.

[41] See Castells 2010; van Dyk 2009; Meyer 2007; Boltanski and Chiapello 2005; Hardt and Negri 2002: 283ff.; Barbrook and Cameron 1997.

Thus current post-monetary approaches, whether they have a more practical or a more theoretical orientation, set out from very different starting points. Against the postmodern background, they are presented with a vast array of possible historical points of reference with regard to the development of needs, forms of division of labor and distribution, forms of decision-making and conflict resolution, and not least, social value orientations and cultural beliefs (worldviews). In practice these points of reference are (as our initial look at the subject has shown) selected and combined in various ways, resulting in a remarkably wide range of approaches.

This encompasses, on the various levels mentioned above, a broad spectrum of ways of thinking and acting:

- On the level of *needs*: from "minimalism" and closeness to nature, or much more developed but still "frugal" orientations, to the global spread of the modern ("hedonistic" and "consumerist") lifestyle (access to a large number of highly-differentiated and complex objects).
- On the level of *production*: from "primitivist" lifestyles or small-scale low-tech production (with a wide variety of underlying ideas) to global high-tech production (with or without a modern work ethic), and (going beyond this) "network" production which is open in terms of forms of technology and the division of labor (and ways of life in general).
- On the level of *distribution*: from concepts of gift-giving, contributing, and mutual help, or (various forms of) barter, to the exchange of equivalents (the exchange of "labor time").
- On the level of *decision-making*: from grassroots processes and forms of organization based on workers' councils, or mixed forms of state and grassroots democracy, to an authoritarian conception of the state ("exper tocracy"/"technocracy").
- On the level of *property ownership*: from small-scale (family) ownership or communal ownership to state ownership, and lastly ideas that dispense with ownership altogether.
- On the level of *society* or *culture*: from ultra-liberal to dogmatically religious or esoteric ways of life, and from "queer" to (sometimes strictly) patriarchal orientations.

In the theory and practice of post-monetary approaches, aspects from the different spectra are combined in diverse ways, as if the postmodern subjects of post-monetary transformation were looking through a kaleidoscope of social and cultural possibilities, and each focusing on specific pictures. This enormous variety initially makes it seem (very) hard to group the existing approaches at all. The perspective of *social theory*, however, offers one possible way to distinguish the approaches: by considering whether and to

what extent they seek to maintain a high degree of division of labor and mechanization (as exists in today's *postmodern capitalism*), or whether and (if relevant) to what extent this is not the case. If we look at the different approaches in the light of this question, we find three basic tendencies, to which the different approaches can be assigned (and which can be understood, in Habermas's terms, as a gradual "heightening of systemic complexity"):

1. The division of labor and mechanization should be more or less radically reduced (= low-tech and no-tech perspective).
2. The division of labor and mechanization should be retained and organized (even) "more efficiently" (= high-tech perspective).
3. The division of labor and mechanization should be organized pluralistically (= multi-tech perspective).

In capitalism, demand and production are mediated via money. If this is eliminated, we have to consider how needs-based production is or will be organized in each of the post-monetary approaches. We need to reflect more closely on the different *alternative* forms of organization developed in these approaches.

The following section will present some of the different approaches associated with each of the three basic tendencies. The idea is not to provide an exhaustive overview,[42] but to identify the different social "grammars" of the approaches, and fundamental problems within each general tendency.[43] Three examples will be given for each.

2.2 Paradigms of the Post-monetary

2.2.1 Reduction of the Division of Labor

At present there are a multitude of post-monetary approaches which involve a more or less extensive reduction of the division of labor. Here three main

[42] Today the internet makes post-monetary approaches (and discussions of them in the media and the political sphere) very visible, though I was only able to explore English-language and German-language sources. The research carried out in the framework of the present study showed that it is no longer possible to gain a comprehensive view of the field (even the limited section of it accessible to me). Some of the approaches not taken into account in the following discussion will be at least mentioned in footnotes.

[43] Stowasser (2008), in the context of the presentation of his idea of "anarchism," speaks of the underlying (social) "grammar." See also repeated mention in Stowasser 2007. Habermas (1987: 392), in the context of his analysis of the "colonization of the lifeworld," also speaks of the "grammar of life forms," which sparks social conflicts in the course of the "differentiation of lifeworlds" and their confrontation with established (patriarchal) norms. In the context of the debate over "empire" and the countercultures that form in "empire," Virno (2004) speaks of the "grammar of the multitude." What is always meant is the core social principles according to which emancipatory forms of life organize themselves.

tendencies can be cited: (a) "self-sufficiency," (b) "(anarcho-)primitivism" and (c) "communes."

(a) I will begin by presenting the category that is most widespread and attracts the greatest attention from the public and the media: at present there are large numbers of people attempting to go "off-grid" or "opt out" of the "(monetary) system," temporarily or permanently. They do so for various reasons: because they have "had enough" of capitalism, because they are trying to find themselves, or find fulfilment, because they want to promote something "different" in society, or, quite simply, because they fear the (social) "apocalypse."[44] Various forms of opting out or withdrawal can be found.[45]

There are, for example, a number of people trying, as individuals or in very small groups, to live self-sufficiently and without relying on money. They seek out (especially in the "global North") niches in which they produce what they need. Their needs and production methods can differ quite markedly. A few examples:

- Gottfried Stollwerk lives on a farm, and manages his small household on the basis of traditional small-farming methods, trying to become as independent of money as possible.[46]
- Jakob Zinkowski lives in a yurt, which he has built partly from materials gathered in the forest.[47] (During the summer he sometimes lives in a tepee.) He uses solar and wind energy, heats his home with a Titan oven (which is extremely energy-efficient), and gets food from "dumpster diving" (collecting discarded food), "gleaning" (gathering harvest residues on fields), barter (exchanging work for food), and growing his own food. He organizes other things from the "free economy," by picking up items left out as bulk garbage, or from house demolitions.
- Daniel Pike created a little refuge in the woods by building himself a small mud hut from materials found in the woods.[48] He used solar

[44] The last category refers to so-called "preppers" or "survivalists." The website http://www.prepperwebsite.com (accessed September 29, 2018), gives an impression of this culture. These forms of "living without money," however, are more about surviving for a certain period of time than about finding a sustainable alternative approach.

[45] In the following section I will only discuss approaches aimed at "self-sufficiency." I would also like to draw readers' attention to two examples, well known in Germany, of individuals or families attempting to live without money, those of Schwermer and Fellmer. See Schwermer 2015; Fellmer 2014.

[46] See "Der Bauer Gottfried," in *Frankfurter Allgemeine Zeitung*, July 10 2009: 8.

[47] See https://www.youtube.com/user/JakobZinkowski (accessed September 29, 2018).

[48] See http://www.mirror.co.uk/news/uk-news/hermit-built-mud-hut-complete-7583117 (accessed September 29, 2018).

cells and ate a vegan diet of vegetables he grew himself, food gathered in the woods, and leftover food that he found.

- Rick Austin sees himself as a "survival gardener": far out in the forest, he and his wife Jane are developing a camouflaged garden, which is intended to ensure their survival after the "collapse" of society and therefore also "after money."[49] Together they are developing an ingenious "system," combining elements of "permaculture," animal husbandry and stockpiling. Ingenious greenhouses not only provide vegetables but also heat water and the (wooden) house.
- More and more people are attempting to achieve self-sufficiency with the methods of "permaculture," whether or not they aspire to creating an alternative economy or bringing about a transformation.[50] One example of deliberately combining "permaculture" and the "gift economy" is Mark Boyle and his project "An Teach Saor" (Gaelic for "The Free House"), which attempts both to achieve self-sufficiency for a small group of people and to build up a moneyless public meeting place and cultural space.[51]

Despite concrete differences in the organization of life, these approaches display certain fundamental commonalities. They are all "sufficient," that is, the needs are generally (very) modest and thus differ considerably from existing needs under the influence of capitalism. The exception is the "preppers," the Austins, who try to maintain a more modern, middle-class lifestyle. And these approaches are (in general) "low-tech": they do not use (complex) machines, but simple tools, equipment and devices.

With regard to their social "logic," these approaches (those where several people are jointly "self-sufficient") often involve little reflection:

[49] See http://secretgardenofsurvival.com (accessed September 29, 2018).

[50] For an approach which explicitly references questions of "living without money," see the magazine *permaculture. practical solutions for self-reliance* (https://www.permaculture.co.uk (accessed September 29, 2018)).

[51] "Being the moneyless man, Mark and his team set about creating a free community space where people from all backgrounds (including you!) can meet, attend free workshops and courses, eat and drink, dance and perform music, play table tennis and pool, relax and take some time out, share skills and stories, all without a single penny changing hands. The smallholding and 'free pub' is even built from local, natural and recycled materials!" (https://www.permaculture.co.uk/articles/tales-happy-pig-mark-boyles-free-pub (accessed September 29, 2018)). For the construction of the venue, however, which was carried out with the help of volunteers, the "project" is dependent on monetary donations (approx. £8000) for purchasing materials. Mark Boyle previously lived for a year as the "Moneyless Man," in a donated caravan (with solar panels on the roof to supply electricity), with an outhouse and no toilet paper (newspapers!), and ate a vegan diet of home-grown vegetables, food gathered in the woods, and food waste. See Boyle 2010, 2013.

established patriarchal identities (which in some cases have already been overcome in emancipatory social movements) and the associated forms of division of labor and decision-making are uncritically adopted.[52]

(b) In *theoretical* debates, the radical form of "simple living" is "(anarcho-) primitivism."[53] "Primitivists" advocate a radical renunciation of "civilization" as a whole, i.e. not just of capitalism, but of *all* high-cultural forms of life. In their view, any form of "high culture" is associated with the emergence of domination: according to this theory, the development of the division of labor during the establishment of arable farming and animal husbandry led to the rise of patriarchal, political, economic, and all other social and cultural forms of domination. The "industrial society," finally, constitutes the highest form of the development of dominion over humans and nature. Particular criticism is aimed at the technology that has developed with the division of labor: it isolates and objectifies "objects," driving a wedge between humans and nature and tearing the "web of life."

Conversely, liberation means the dissolution of all power relations and thus all "civilization" (in essence: the division of labor and technology). In very radical versions this extends as far as rejecting any form of symbolic thought and communication. The aim is to "go wild," in the sense of "reconnecting with the web of life." People are encouraged to deal intuitively with themselves, other people, and nature. The aim is to live joyfully and spontaneously, helping each other and caring for the environment. The idea of "organizing" a "free society" in political terms (a typical aspiration of other anarchist approaches), is rejected: "Organizations, for anarcho-primitivists, are just rackets, gangs for putting a particular ideology in power. Politics, 'the art and science of government,' is not part of the primitivist project; only a politics of desire, pleasure, mutuality and radical freedom" (Moore [n.d.]).

In general, "rewilding" or "going wild" is understood as the re-establishment of small social units, such as existed before the beginning

[52] In the context of the "family homestead" ("Familienlandsitz") movement, which is oriented toward "self-sufficiency," heteronormative relationships are idealized and encouraged, and homosexuality is explicitly rejected. See: Anonymous, *NET-Journal* 21, no. 5/6: 64.

[53] I base these remarks on the descriptions in Flood 2004; Moore [n.d.], and https://en.wikipedia.org/wiki/Anarcho-primitivism. "Primitivism" can be classed as part of the anarchist spectrum. This spectrum currently includes a multitude of very varied post-monetary approaches, which I will not discuss here. See for example Killjoy 2013; Stowasser 2009, 2008, 2007; Solidarity Federation 2003. In my view, the approach of the Cooperativa Integral Catalana (2015) can also be allocated to this spectrum.

of the process of "civilization." Indigenous cultures serve as points of orientation and sources of inspiration, but the notions of future "simple living" go beyond this. At the same time, marked differences can be observed between different proponents: while some see "permaculture" as a good (and practicable) solution, others think (self-)sufficiency should be achieved by hunting and gathering. While some want to hunt and kill animals, others advocate vegetarianism or even veganism. What all these approaches have in common is a positive attitude toward simple tools, since these, unlike more complex technologies, do not (necessarily) entail "alienation" from nature.

(c) "Communes" with an aspiration to "self-sufficiency" aim for a much higher degree of division of labor (not necessarily of mechanization) than the approaches just described, but a much lower degree than that which exists today. Sometimes there are substantial differences between these approaches, as in the case of the "Krishna Valley" (1) and "Twin Oaks" (2) communes. As both variants have been "working" for many years, despite their very different modes of organization, it is worth taking a somewhat closer look at them.

1. In the context of esoteric movements we find various attempts at or examples of living without money.[54] One example of a "commune" with esoteric foundations and a focus on "self-sufficiency" is "Hare Krishna Valley" in Hungary. Here around 150 people live largely "self-sufficiently" on 260 hectares of land.[55]

   The idea underlying the community is that of "simple living," with an emphasis on service to the community and "spiritual experience." "Self-sufficiency" is a key element of life, as it makes the community independent of external influences, thus leaving more space for "spiritual development" ("Krishna consciousness")—hence the consistent focus on self-reliance in food and energy, right from the start. "Self-sufficiency" is also meant to lead to a "sustainable" and "healthy" lifestyle, to be achieved by combining various traditional and modern techniques of cultivation and energy generation, and by the use of alternative medical technologies:

[54] One example is the Indian village "Auroville," which is funded by various state institutions. See Eisenschenk 2016. Further examples are the spiritualist approaches of Tellinger (2013), Fasching (2010), and Das (2014, 2012).

[55] Here I am following the remarks in Rethy 2014 and on http://wiki.yoga-vidya.de/Krishna_Valley. It should be noted that even this community is still dependent on certain inflows of money. Income is obtained from tourism, the sale of foodstuffs and craft products, and educational events.

> Traditional methods, such as the use of oxen for plowing, and current permaculture principles, such as polyculture, mulching, fertilizing with plant-based manure such as nettle/comfrey manure, form the basis of the organic farming in Krishna Valley. Krishna Valley is self-sufficient in vegetables, fruit, grains, nuts, milk and honey. All the residents are, of course, vegetarians. Furthermore, they use sustainable methods of energy generation: solar and wind energy. For wastewater purification, a treatment wetland, a reed bed, has been constructed. The natural lifestyle is also reflected in the in-house healthcare. The doctors practice according to Ayurvedic principles, and the residents' way of life is also based on Ayurveda.
>
> http://wiki.yoga-vidya.de/Krishna_Valley

The concrete organization of "self-sufficiency," decisions about *what* to produce, follows a clearly defined "hierarchy of needs," distinguishing between "primary needs" and "other needs":

> Self-sufficiency in Krishna-valley is based on ten basic needs of the community. Primary needs of a community include food and water, housing, clothing, healthcare and education. Importance of the other needs varies between geographical location and the aims of the community. These include heating, lighting, transport, handcrafted products, arts and protection of the community. From these needs, food production is identified as the most important one . . .
>
> Rethy 2014: 14

The organization of the production required to satisfy these needs follows a clearly regulated hierarchic structure. On the lower levels, this organizational structure does not envisage any forms of democratic participation; the only avenue available is to make petitions to the upper levels on a given subject. Democratic elements are only found on the higher levels of the hierarchy, which are in turn embedded in organizational contexts that go beyond the "commune" itself:

> Management of Krishna-valley is controlled by a board of directors, from which each member is responsible for one directorate controlling a certain aspect of life. Directors are appointed not by the community, but by the Hungarian Krishna-community, however in itself decision making in the board of directors is of democratic nature. Directorates are composed of

> departments, which are under the governance of the head of the departments. The heads of departments are appointed by the board of directors.
>
> ibid.: 15

The higher levels determine which activities are to be carried out and how these are to be allocated (so *who* is to do *what* and *how*). The members on the lower levels (who implement these decisions) are, in principle, unpaid workers, but in exchange they have access to goods for free, and also receive small amounts of money. The time taken up by the work is seven hours a day, six days a week. Members who are not able to work (for example women with small children or older people) are also provided for.

In keeping with the strictly hierarchical political and economic organization, "society" here is also hierarchically constructed, mainly on the basis of "castes" and "stages in life." Gender identities are heteronormative, marriages are arranged via "mentors."

Those wishing to join this community must meet many requirements: access to the community is only possible after years of "spiritual preparation," and there is a probationary period lasting several years.

Overall, then, the social order of the Krishna community is hierarchical in every respect. Needs are very modest and rigidly fixed. Production is partly based on modern methods, though the division of labor is not highly mechanized, so production is relatively labor intensive. It is not possible to live in this village without sharing the values and norms of the Krishna community: they determine the community's needs, dictate acceptance of the power structures, and above all, govern access to the community. In general, it can be said of religious and esoteric approaches that the "unity" of the communities is not based on *formal* democratic "values," but on a *concrete* cultural ideology.

2. Another community largely independent of money is "Twin Oaks" in the US, which has existed since 1967, and currently consists of around 100 people living on 141 hectares of land.[56] The

[56] I refer here to Wagner 2014, to reports by visitors (Roth 2011; Glatz 2006; Hollick 1998), and to self-descriptions by a member of the community (Kinkade with the Twin Oaks Community 2011) and by the community itself (https://www.twinoaks.org). Twin Oaks is also not completely independent of money. Income is generated mainly by the sale of goods produced in the community, such as seed, hammocks, foodstuffs, and services (e.g. editing, book indexing).

community's (collective) "self-sufficiency," in absolute contrast to religious or spiritual/esoteric communities, is based on the acceptance of cultural diversity (different needs, ethnicities, religious and sexual beliefs). Membership is not restricted by entry fees or cultural aspects, and the decision-making structures are also quite different, though here too the economy is not organized as a grassroots democracy, but more as a "flat hierarchy."

Members' actions are based on values of sustainability (Twin Oaks sees itself as an "ecovillage"), the production of food and energy is based on "alternative" methods, and needs are correspondingly modest, though quite diverse (there are, for example, meat-eaters as well as vegetarians and vegans). Against this background, a high value is placed on the sharing of "resources" (vehicles, workshops and tools, living space, library, communal house and kitchen, washhouse). The inhabitants of Twin Oaks also share a large number of leisure activities (dancing, meditating, board games, book groups, making music and putting on musicals).

The economic foundation of this life is organized without any monetary or other kind of equivalent exchange: basic needs such as accommodation, clothing, food and medical care, as well as telecommunications, are supplied free of charge. In return, every adult member commits to "working" for the community for 42 hours per week—with "work" encompassing a wide range of activities:

> . . . what counts here as work is everything that is part of maintaining the community: not just work in the income-generating activities—the hammock workshop, the tofu factory, and the seed nursery—but also other productive tasks, such as work in the vegetable garden, care of the farm animals, and wood harvesting. But also all the reproductive tasks, such as cooking, cleaning, carrying out repairs. And childcare. And, for example, teaching music or yoga. All these things are rewarded with labor credits, which the community members record themselves. This makes it transparent what I am doing. And the "quota," as the required volume of work is called, is quickly reached in this model.
>
> Roth 2011

"Labor sheets" are a core element of the "economy" in this "labor credit system"; "managers" use these to try to reconcile members' wishes regarding activities and working hours with the tasks that need to be carried out:

> Each week, every member fills in a labor sheet setting out what work they want to do for the following week. Also, each area Manager submits requests for labor to do the necessary tasks. A labor assigner then goes through the complex task of matching these two sets of demands. Draft assignments are then issued, and members have a chance to ask for revisions before the final assignments are made. Members are able to do much of their work whenever they wish during the day or week.
>
> Hollick 1998

The task of taking members' needs into account as much as possible while ensuring that the work gets done is seen as a difficult undertaking, which could not easily be computerized.

Dealing with the "labor sheets" is part of a "planner-manager system," which not only allocates tasks, but also makes decisions about what is produced and in what quantity. This system of organization is not democratic in the sense of "grassroots democracy," but instead follows the model of a "flat hierarchy," and displays a clear structure:

> Basically, the community has a kind of participatory, rotating system of self-government, in which every decision is made by individuals or small groups on behalf of the larger group. Here a key role is played by the "planners" and "managers." The planners are three people who assume the primary responsibility for the project, each for 18 months. Every six months one of them is replaced by a new person, creating a constructive mixture of experience and fresh ideas. All the important organizational areas are administered by the managers, sometimes under their own responsibility, sometimes as a small group. This covers areas of major economic importance, such as the hammock business, but also the laundry and the communal clothing area. It is planners and managers who make decisions in Twin Oaks.
>
> While these terms are normally associated with positions of power, in this project they are job descriptions that can be taken literally. Being a manager or planner is not linked with any privileges, but is more of a service to the community: it involves taking special responsibility in the community, having a good feel for the group, and trying to make the right decisions. Any decision can be questioned by any member. Those in positions of responsibility are therefore at pains to be close to the group, to find out what the group needs, and what group members, in general, think.
>
> Roth 2011

Not only do the "planners"/"managers" seek to meet the needs of the community members as well as possible, members also have other opportunities to express their needs and to influence "planning"/"managing":

> A large part of the discussions on specific topics is carried out via a bulletin board consisting of two panels with many, many clipboards. Anyone can start a discussion on any topic, by putting a position paper on the board. Anyone who wants to take part in the discussion can answer by adding further sheets of paper. Sometimes several pages long, thoroughly researched, with references to scholarly literature and a sense of mission, sometimes just one word. So if the managers want to know whether the collective thinks that a new guest house is necessary, this is how they get an answer. For urgent topics meetings are convened, but no voting ever takes place there. This kind of organization leaves it up to members to choose how much they want to participate in decision-making, and how much responsibility they want to have.
>
> ibid.

Or:

> A very interesting example of an institution of negotiation in Twin Oaks is the so-called "trade-off game," used to determine the allocation of money and working hours for the year to come. The "planners" . . . make a budget proposal for the coming year. Every resident can make up their own ideal plan, which is compared with the original plan, resulting in a final budget created with everyone's participation.
>
> Wagner 2014: 148

There is also a community meeting once a week, in which members have the opportunity to discuss their concerns with the planners. It is even possible to stop a "plan" by means of a petition (the majority of members must sign). A "veto" (twenty percent of members) can be used to prevent the appointment of a planner.

To resolve conflicts, the members may call in "moderators," i.e. impartial third parties, or a so-called "process team" (which can also be consulted in the case of conflicts regarding the organizational structures of the community).

The basis for all actions is a few formal statutes and a large number of quasi-codified rules ("policies"). These policies are

mainly the result of "work" in "work groups." In 2008 they were collated by a "process team" and made generally accessible.

The community is also connected to the outside world in various ways. Along with seven other "intentional communities," it is part of the Federation of Egalitarian Communities (FEC), within which various forms of mutual assistance have been established (e.g. help with bringing in the harvest). The network has its own constitution and holds a regular (annual) assembly.[57]

It may be noted that it is not only this specific form of networking that clearly distinguishes Twin Oak from Krishna Valley. The inner social organization is also *qualitatively* different: unlike the ideologically based hierarchical structure of Krishna Valley, the Twin Oaks "planning system" ensures that the members, despite major differences in cultural attitudes, are motivated to get involved.

In practice, however, it becomes apparent that even "intrinsic motivation" is sometimes limited: members feel a certain pressure to get involved, and some members endeavor to collect "labor credits" for even the smallest task.[58]

Beyond the obvious differences, the two approaches presented here also show some common ground:

- Both communities are located in a rural (not urban) setting.
- The members have modest needs (compared to the normality of the "consumer society," not in comparison to the approaches described earlier).
- Life and therefore production have an environmental focus.
- Production is artisanal in nature.
- There is an obligation to work, and (only) the fulfilment of this obligation secures free access to the necessities of life (and other things).
- When it comes to deciding what should be produced and in what quantities, both communities develop (as a substitute for money) specific planning processes. Though very different, these are in both cases non-democratic.

As with small groups and those wanting to "go it alone," these approaches (despite their explicitly *pluralistic* orientation in some cases) all constitute a very radical break with key elements of modern society.

[57] More detailed systematic reflections on the more extensive "networking" of small manufacturing units, producing in a planned way on the basis of "labor credit," can be found in Nelson (2016, 2012).

[58] A critical discussion of Twin Oaks can be found in Kuhlmann 2001.

They renounce not only the developed division of labor and developed technology but also the possession of highly differentiated and complex things, as well as urbanism, anonymity and individualization, solidarity between strangers, and democratic decision-making processes. Even people dissatisfied with the *existing* system may not find this perspective either attractive or compelling.

Various problems of "life on a commune" have always arisen and continue to do so, e.g. a lack of (adequate) skills, inadequate processes of conflict mediation, disintegration into factions, and a lack of new recruits (Clay 2017; Joha 2015). Living successfully in such a "commune" obviously requires a radical change in attitude and/or a high degree of conflict-solving ability.

Furthermore, we have to ask to what extent such small-scale approaches ("intentional communities") can be implemented and made to work: is it actually possible for the seven billion people (or more) on earth to live *well* in this way, i.e. comfortably, sustainably, and in peace? Are these approaches actually *generalizable*?[59]

2.2.2 Perfecting the Global Industrial Division of Labor

Besides the various approaches advocating a low degree of division of labor, as described above, there are others arguing the exact opposite: that perfecting the division of labor will allow a general high standard of living. Three perspectives are especially relevant here: (a) socialism based on workers' councils ("soviets") (b) "cybersocialism," and (c) the "resource-based economy."[60]

(a) A well-known example of socialist approaches based on workers' councils is the concept of the "participatory economy" ("parecon").[61] This involves systematically organized production with a high degree of division of labor, carried out by individualized subjects, requiring no markets and using the flattest possible democratic forms of organization.[62]

[59] As far as I can see it would be possible to work this out mathematically in relation to "communes." For the problem of generalizing "intentional communities" see also Siefkes in this volume.

[60] The "matching" approach is left out in this selection—but see the article by Heidenreich in this volume.

[61] See Hahnel 2012; Albert 2003. A short presentation can be found in Sandström 2016, chapter 1, and at http://www.participatoryeconomics.info/wp-content/uploads/2014/11/Participatory-Economics.pdf (accessed September 29, 2018). I will not discuss, at this point, "inclusive democracy," an alternative moneyless system based on workers' councils. For this system see Fotopoulos 2008, 2005, 1997.

[62] The approach sees itself explicitly as post-monetary. See http://www.participatoryeconomics.info/wp-content/uploads/2014/11/Participatory-Economics.pdf (accessed September 29, 2018). See esp. p. 51.

According to this approach, production within society takes place (on the institutional basis of collective ownership) in self-governed units. "Consumers' councils" and "workers' councils" determine *what* is produced and *how*. Worker/consumer participation in production covers both the individual production facility and macroeconomic planning. The development of elaborate processes of voting and decision-making is assumed to be necessary here: depending on the scope of the decision, a vote at local (neighborhood), regional, or supra-regional (state) level may be necessary, which in turn necessitates some sort of representative processes. The councils determine their own voting procedures (simple majority, two-thirds majority, or consensus). Plans for production and consumption are drawn up in several rounds of discussions for the period of a year (and modified in the interim if necessary). An important element of planning is the "Iteration Facilitation Board" (IFB), a working group which, during the decision-making process, constantly presents the "costs": the resources, time, and effort required for activities, the effect that producing one thing will have on the opportunity to produce something else ("opportunity costs").

Like other alternative approaches, the "parecon" approach makes the basic assumption that a multitude of activities that are necessary today will no longer be relevant in a post-capitalist society. In general, activities that should be mentioned in this context are arms/defense, administration/the executive, the finance industry, advertising, expenses for the management of crises/"externalities," and elaborate infrastructure for globalized production, which in some cases proves to be ecologically unacceptable.

This approach permits and indeed welcomes the use of advanced technology in the production process, in keeping with its fundamental aspiration to "efficiency." The aim is to develop an economy with a high degree of division of labor and productivity, i.e. with low individual working hours, but a relatively extensive satisfaction of needs (in the form of access to quite complex things). The work in the production facilities is organized in the form of "balanced job complexes": each individual can theoretically carry out both "challenging" and "simple" jobs, so that no one is disadvantaged and all workers are "motivated." (The idea is that they also have the freedom to choose whether or not to carry out a specific job.) This in turn allows more democratic planning, as everyone has an insight into the specific sub-functions of the production process.

Individual access to the results of production is not determined via "the market" (or any other kind of "exchange of equivalents"), but by

means of a specific accounting system: with his or her work, every working person acquires "consumption rights," which are stored on a chip card. The extent of these consumption rights is determined by the time, effort, and sacrifice the work entails.[63] This allows differences between areas of production to be balanced out (one example might be strenuous highway construction work vs. pleasant cultural activities). So there is no exchange of equivalents, but there is a "logic" of performance and reward. Furthermore, trade is not excluded, but it is only envisaged in the form of barter.

In normative terms the approach emphasizes the "openness" and "diversity" of society and culture, the central importance of "solidarity" ("taking care of each other and being able to benefit from the community rather than competing with each other and trampling each other down"), and a coexistence organized according to environmental principles.

Overall, then, this is a blueprint for a post-capitalist/post-monetary society which adopts core elements of capitalist society: a high degree of division of labor and mechanization/efficiency enhancement, a "logic" of performance and reward (including a *specific* form of "paid work"), and a "society" or "culture" of isolation and (post-traditional) individualization.

Criticisms of the concept of "parecon" (from a normative perspective) focus particularly on the organization of the economy according to principles of exchange, and, connected to this, the "entrepreneurial" form of organization of activities.[64] Another (more practical) point also seems problematic, however: the assumption that less will need to be produced under post-capitalist conditions, and that the post-capitalist division of labor will be highly productive. These assumptions lead to the conclusion that, in the changed conditions, a high degree of satisfaction of needs combined with a low number of working hours is possible or likely. Under these conditions, people may conceivably "participate" in elaborate democratic planning processes. Here, however, we have to ask whether people *want* to participate in such processes (beyond just voting more often). And *can* they do this, i.e. can they acknowledge the

[63] For a more detailed discussion of the problem of post-monetary "accounting" in the context of the parecon approach see Sandström 2016.

[64] See also the debate between Albert and Siefkes in Albert and Siefkes (2012/2013). Schilk (2010) makes the following criticism: "From the perspective of the gift economy one could accuse Albert of [. . .] lacking imagination, because he obviously cannot help thinking in dimensions of money and reward: everywhere you look, there is measuring, judging and rewarding."

"contributions" of others as being of equal value, despite the patriarchal etc. ascriptions that will probably continue to exist, and can they make compromises, understand and evaluate complex matters, and articulate their own opinions? In *contemporary* society this would probably require elaborate learning processes, in which the social "competencies" required for radical democracy could be acquired.[65]

Despite these normative and practical objections (which not only apply to the "parecon" model in particular, but also to approaches to democracy based on workers' councils and those of "inclusive democracy"), the argument often made against radical approaches to democracy and those based on workers' councils—that larger social structures are *in principle* not possible without *state* organization—can be refuted in the light of relevant research on contemporary stateless societies (mainly in Africa and South-East Asia).[66]

(b) In the current discourse on alternative economies, there are still various socialist models based on a planned economy. Many of these approaches aim at the development of a post-monetary high-tech (global) economy. This position is prominently and polemically advocated (especially in opposition to "grassroots" approaches) by proponents of "accelerationism." They argue that capitalism should be overcome by a radical "acceleration" of technological change, and replaced by a kind of "technocommunism."[67]

The basic idea shared by approaches focused on a planned economy is the perpetuation of the global division of labor, including the use of advanced technology and specialization, and, underlying this, a modern, consumerist lifestyle. Such approaches differ, sometimes quite markedly, when it comes to how a society's production should be planned, and how the results of the production process should be distributed. After the experience of the planned economies of "real socialism," the key question in post-socialist debates is that of more democratic forms of planning.

[65] In this context we can refer to Fotopoulos's (2003) criticism: that "parecon" merely formulates a few basic economic principles, without specifying how they are "embedded," especially in political terms. This would mean that "parecon" could also be envisaged within the framework of a centralized state (a possibility which Fotopoulos explicitly criticizes).

[66] See the studies of Amborn (2016) and Scott (2009), which take an explicit and unambiguous stance on this problem.

[67] Srnicek and Williams 2015, 2013; Avanessian and Mackay 2014; Avanessian 2013. Srnicek and Williams cite the Cybersyn system, developed in Chile in the early 1970s, as an example of a radical spirit of technological experimentation. See Pias 2004.

A prominent approach can be found in the model of "cybersocialism" developed by Cockshott and Cottrell.[68] This is a "consumerist" form of economy based on the division of labor and the exchange of equivalents (quanta of labor), with relatively participatory institutions.[69]

Cockshott and Cottrell's fundamental aim is to use *different* forms of social organization to expand and transform the level of the current economy, which has evolved over time, i.e. the high degree of division of labor and private access to a multitude of complex consumer items. Thus capitalist society, with its focus on work and consumption, is "sublated," as it were, into a planning-based "system." The idea is that "wealth" will then be better (and more fairly) distributed, and production will be "more efficient," "more sustainable," and above all more democratic. (As in "parecon," the fulfilment of certain specifically capitalist needs would become superfluous here.)

A key element in this approach is the computer. This allows both a precise form of planning and distribution, and the implementation of grassroots democratic processes. The core of planning and distribution is a computerized "labor-time calculation" based on "common ownership of the means of production":

> C&C [Cockshott and Cottrell, L. H.] take it [the concept of "socialism," L. H.] to mean a society whose reproduction is determined by a planned economy on the basis of common ownership of resources and the means of production. Since money and the market no longer have any meaning or purpose in such a mode of production, its rationality is based on a—computer-aided—labor-time calculation. Personal acquisition is regulated by means of labor-time credit.
>
> Dunkhase 2014: 1

Computers make it possible to exactly determine the "labor time" to be spent producing a commodity. Every person is given access to the

[68] Cockshott and Cottrell 1993. For more on this see e.g. Internationale Forschungsgemeinschaft für Politische Ökonomie 2011. Further approaches which conceptually combine a high degree of division of labor (and a correspondingly high level of mechanization) with "democratization" are: "twenty-first-century socialism" (Dieterich), the "needs-based supply economy" ("bedürfnisorientierte Versorgungswirtschaft") (Fresin), the "marketless economy" (Harbach), "participatory planning" (Devine, Callinicos). See Callinicos 2003; Harbach 2011; Devine 2010; Dieterich 2006; Fresin 2005. For the debate on the current relevance and possibilities of planned economies see Science & Society 2012; Das Argument 2010, and the fundamental and programmatic reflections in Krysmanski 2012 and 2010. One of the topics Krysmanski discusses here is the necessity and possibility of "releasing planning data from their capitalist corset." The reflections of Dath (2008) point in a similar direction.

[69] See also the presentation by Fleissner in this volume.

"goods" produced in accordance with the "labor time" he or she has contributed. Here Cockshott and Cottrell stress that a certain proportion of "labor time" or of the "social product" must be redistributed to provide for people who cannot be actively involved in the production process.

Specific, individual needs for "consumer goods" are not ascertained in democratic discourses (as in socialist approaches based on workers' councils), but by means of computer technology; other things (e.g. "public goods"), on the other hand, are not sold at all, but are distributed (and manufactured) on the basis of democratic decisions:

> In our book we assume that super computers carry out the planning, and that there is a real-time feedback mechanism. This mechanism is based on two sources: on one level, these are the real-time data about what is actually being sold in the shops. Everything that goes out of a supermarket today is scanned in via the barcode. We have computers which can transfer these data to the planning computers, so that we have real-time input about what has actually been sold.
>
> At the same time there are many goods which are not sold as products. Democratic decisions must be made about their distribution. The combination of the two mechanisms would allow an economy to react very fast.
>
> Cockshott 2006: 3

If it turns out that the demand for "consumer goods" exceeds the supply (or vice versa), then "equilibrium prices" can be calculated ("market algorithm"); the "inconsistencies" will then be taken into account in the subsequent planning and production process.[70]

This moneyless economy can basically do without money (and without the market), but not without the state. This applies not only to the form of ownership ("state ownership"), but also to the planning process, which is carried out by a "planning authority." This authority has various duties:

- Calculation of the gross output
- Distribution of resources in physical units
- Distribution of the work done in society (in working hours/labor time)
- Plan optimization

Dunkhase 2014: 6

[70] Here it seems uncertain how new/different needs can be taken into account in production.

Here too, the computer proves to be an essential instrument: there is both a computerized calculation of production in material quantities ("matrix") and a computerized calculation of the "labor time" contained in a manufactured object ("input-output table").

The planning process organized by the planning authority is meant to be as democratic as possible, though here again the use of computers proves essential. This involves computerized direct-democratic decisions ("plebiscites") about "material issues" such as the level of the national budget and the way it is used for public services (e.g. investments, infrastructure, health, education), and, for example, international agreements. The idea is that decisions will always be based on a thorough public debate. These are easily accessible for everyone via the use of modern mobile communication technologies. At the same time, voting can very easily be carried out using such technologies.[71]

All things considered, individuals prove to have relatively little control over the socially productive work they carry out under the conditions of "cybersocialism." And the (capitalist) rationality of the exchange of "equivalents" also remains in place. Moreover, it is uncertain to what extent the approach can do justice to its own aspiration to greater democratization: the principle of majority rule is still in force, the danger of "burocratization" still exists, and the approach still conceives of a *global* system, based on the division of labor and the intensive use of resources, which raises questions about the possibility of other ways of life than "cybersocialism."[72]

(c) The absolute opposite of all those approaches that seek to mediate the concepts of "plan" and "democracy" (each in a specific way) is the relatively well-known approach of the "resource-based economy." This formulates the post-democratic idea of an authoritarian or technocratic (global) planned economy, and thus has none of the above-described problems of democratic self-organization.[73]

The aim of this approach is a high, globally equal standard of living, as far as resources and science and technology allow it. Here too it is assumed that when capitalist production is eliminated many things will no longer have to be produced, and it will therefore be possible to use

[71] A kind of cellphone democracy is being developed here, based on the premise that individuals will seek information and take part in votes.

[72] For critical discussions of "cybersocialism" see Neupert-Doppler 2016; Zelik 2011; Sandleben 2007; Sandleben and Cockshott 2007; Müller 2007; Stützle 2007.

[73] This approach mainly attracted attention thanks to the films of the "Zeitgeist Movement." For the basic principles of this movement see The Zeitgeist Movement (n.d.). My remarks are based on Schäfer and Winter 2010 and http://zeitgeistmovement-sn.de/downloads/RBE_kurz.pdf (accessed September 29, 2018).

"resources" differently. The idea is that this will enable people to enjoy material prosperity. At the same time, the aim is to largely "abolish" socially productive activities so people can engage in other pursuits, which interest them (e.g. education, leisure activities).

Here production and distribution are not organized by means of a democratic process; on the contrary, the aim is to abolish the political system as a whole and replace it with a central, global "resource management system," also referred to as the "Cybernated Industrial System." Ideally this will involve a radical use of computers: the idea is that computers will make as many decisions as possible. The approach thus invests particular hopes in the development of "artificial intelligence"; it envisages a time when people will be able to ask computers whether something they see as a problem actually is one.

Until "artificial intelligence" is available, however, and in the phase of transition to such an economy (as well as in particular crisis situations such as wars and disasters), the use of "competent" and "intrinsically motivated" "experts" becomes especially important:

> In a resource-based economy, politicians will gradually lose their decision-making role. Instead, decision-making will be entrusted to interdisciplinary teams of academics, system analysts, engineers, computer programmers etc. The teams will only be assembled temporarily to solve a defined problem. The selection will be strictly based on the criterion of a person's competency in the relevant area, and their capacity for solution-oriented work. Participation in the project will be voluntary, and will bring no remuneration or specific personal advantages over other people; this means that the motivation of the people in the team must be intrinsic.
>
> Schäfer and Winter 2010: 13f.

In this "system," the "experts" strive for complete automation of the production process. Production and distribution both follow a pyramid of needs, which stipulates that "basic needs" will be satisfied first, and then other needs, as far as resources allow—the view being that with the right planning it should be possible to achieve a relatively high "standard of living" for everyone.

For the practical development and implementation of this "system," a specific subjectivity is regarded as necessary: people must learn to consider the world (and especially the problems existing in it) not subjectively (in emotional, moral or religious terms), but objectively ("rationally"). This serves as a polemic counterweight to other attitudes, in particular the religious consciousness. From this perspective,

religion—which merely speaks of a better world—is replaced by a "functional spirituality," which now becomes a practical reality:

> When it comes to notions of caring people who work together in mutual respect and harmony, a resource-based economy puts into practice everything that the great religious and philosophical teachers have always talked about since the beginning of time.
>
> The application of science and the scientific method, although often misunderstood as cold and heartless, actually offers one of the must fundamental spiritual revelations known to humanity. Instead of merely *talking* endlessly about peace, love, and harmony among the peoples of the earth, science can actually *work* on making these a reality. The results of its work, in the form of technology, offer revolutionary benefits to the whole of humanity.
>
> While many people regard Mother Teresa's selfless nature with great admiration and respect, only very few people tend to view Alexander Fleming, the inventor of penicillin, in a similarly romantic way. Penicillin, so far, has saved incomparably more lives than any charitable idea or organization. Science, as a means of getting closer to the natural workings of our universe, can be seen, in conjunction with technology, as divinity in action.
>
> The Zeitgeist Movement, n.d., section on "Functional Spirituality"

The approach is therefore based on premises that have never been more questionable than today, under postmodern conditions: the objectivity of science has never been as much in doubt as it is today, so it is now less possible than ever to define problems in terms of technology, or justify technological solutions. Not even *specific* technological "solutions" to a (technologically defined) problem can be justified on the basis of the current state of science (not that of *politics*!). From the point of view of today's science the opposite must be assumed: that science and technology are always already embedded in society (and therefore *political*), and that therefore what we need to find are *social processes* for organizing "resources" and activities, and, linked with this, determining how and to what extent technology is to be used. It is questionable whether people even *want* an "equal, high standard of living," and what means they are willing to use. In view of the multitude of lifestyles that exist, and especially considering the broad "post-development" movement, the program proves to be not only technocratic, but also deeply Eurocentric.

The main differences between "parecon" and "cybersocialism" on the one hand, and "resource-based economy" on the other can be seen in

the opposition between democracy and "expertocracy" or "technocracy" (including the corresponding ideological implications), and in the opposition between exchange based on effort or performance and central distribution.

Despite the obvious differences, however, the common ideal of all the approaches presented in this section is that of having much and doing little—in other words, a high level of labor productivity. What they also have in common is the assumption that society can and should be based on solidarity among different people, or among strangers.

Today programs of this kind seem more likely than "self-sufficient" approaches to appeal to the broad majority of people who are discontented with the "system" (or open to alternatives). But they raise certain common problems, particularly in view of the postmodern pluralization of society.

For one thing, how do they deal with "difference"? What if people want to live differently, e.g. they want a "low-tech" lifestyle? How do these approaches deal with needs that cannot be met by industrial production (e.g. for untreated, regional food and building materials, alternative therapies and alternative educational and parenting practices)? Is it conceivable that "resources" might be removed from the grasp of industry and made available for other forms of production? What about indigenous people, who (if they are asked) often do not want to participate in the industrial system? And finally, what if, in a "free" and "knowledge-oriented" society, processes of reflection take place which lead to other needs, not only "material," but also *social*? What if, for example, *many* people wanted to produce in a manner that was self-organized, in harmony with nature, and did not involve any exchange? What if they even found ways in which this was possible *for everybody*? Would the industrial system be capable of transforming itself to meet the changed needs of the (many) people?

For another thing, and connected to the above: in view of the "path dependencies" that come with industrial technology, how do these approaches deal with technological "progress," in the sense of the emergence of "more efficient"/"more sustainable," and usually non-industrial technologies (keywords: "fabbing," "permaculture," "cob building," "alternative medicine")? It seems too much to hope that approaches with an extreme fixation on science and technology, such as "resource-based economy," will be open to learning processes here.

And a third point: there are guiding principles or maxims inherent in every technology, which become "imperatives" for the users of the technology. How can it be ensured that, in an alternative "system," technology is only developed and used if it fits the following "categorical imperative": "Have and use only those things, the inherent maxims of which could become your own maxim" (Anders 2002: 298)?

These problems bring us, lastly, to a further—currently vigorous—trend in post-monetary economic activity, based on the principle of plurality and openness on all levels of economic action.

2.2.3 Post-industrial Flexible/Multi-technological Division of Labor

The problems that emerged in the above discussion, in the context of approaches with both low and high degrees of division of labor, seem not to occur in another school of post-monetary approaches that are much discussed at present: those that can be subsumed under the generic term (post-monetary) "network economy." They are concerned with the development of an open, *liberal* and at the same time potentially (but not necessarily) *highly cooperative* economy.[74] Three theoretical and practical perspectives can be cited for this (totally different) kind of post-monetary economy: (a) the open source movement, (b) the urban "free economy," and (c) "commons-based peer production."

(a) Probably the best-known examples of this kind of economic activity is the production and distribution of open-source software. In general, open-source software is produced by collaboration between programmers.[75] It is project-oriented, insofar as it always has to do with a specific technical application problem. This is collective, decentralized, "networked" production, in which people in different parts of the world can participate, regardless of cultural, religious, sexual or other differences.

The basic "logic" by which the production process for open-source software is organized is characterized as "do-ocracy" by the actors involved:

> The principle of do-ocracy is that you push your way in, you draw attention to yourself. You recognize a need and you do something, you may get a bug. There's no support system for beginners. You just write an email: "I'd like to join in" . . . Then you get a noncommittal answer: "Great, go for it." That's it. Nobody sends you away, but nobody comes up to you either: like at a party, when several guests are standing in a circle and talking, and you join the circle. At some point you make a comment, join in the conversation, and then you're in. It's the same with all these volunteer things.
>
> Quoted in Habermann 2009: 203

[74] The approaches described below overlap with those based on the "gift economy," which I do not explore here. See Vaughan 2016, 1997; Siebert et al. 2014.

[75] Open-source software is often also created by paid programmers. In the following discussion I refer only to moneyless projects.

This "do-ocracy" can be understood as a form of "social self-organization" which ultimately differs from the idea of "democracy": "A do-ocracy . . . is an organizational structure in which individuals choose roles and tasks for themselves and execute them. Responsibilities attach to people who do the work, rather than elected or selected officials."[76] "Do-ocracy" gets by without consensus-building, and also without any (temporal or social) separation of decision-making and implementation. The basic principle is that participants in a "project" (i.e. those producing something) interact as equals. The only hierarchy is a very flat one, in the form of the "maintainer" principle:

> The person who coordinates work on a project is called the "maintainer." He or she collects the changes to the code as they arrive, gives experienced and hard-working contributors direct access to the code, and gathers bug reports from users. Usually, maintainers themselves are most actively involved in the work on a project. If someone is not happy with the work of the maintainer, he or she can if need be resort to . . . the instrument of the "fork." Usually, however, once maintainers lose interest in a project, they voluntarily pass it on to the people who are working and want to work most intensively on it. So a maintainer is not the "boss," but at most the coordinator, whose power is always restricted by the possibility of the fork.
>
> Schäfer 2005

Thus the power of the maintainer is limited by the fact that it is possible to branch off or create a fork, and continue production on another path. This means the maintainer's power cannot, structurally, go beyond the "authority" of moderation.

This informal form of collaboration presupposes particular forms of individual motivation. For example, the motivation can be political; it can be a desire to combat capitalism (especially the principle of property). It can also have other origins, however: the desire to tackle an existing problem; the kudos of working on an important project and/or carrying out "pioneering work"; or the simple pleasure of shared creative activity.[77] Another important impetus for developing open-source software is the programmers' own need for effective and controllable programs. Thus "intrinsic" reasons play as much of a role as "status," and this "status" is not defined by money or by positions of power.

[76] https://communitywiki.org/wiki/DoOcracy (accessed September 29, 2018). To make the text more readable, online sources will be given in the footnotes in the following section.

[77] For these motivating factors, see also Schäfer 2005.

The moneylessness of open-source software is not limited to its production, however. It also extends to its distribution, which is "free" in more than one respect: the basic principle is that the technologies are disseminated without any exchange and without any other conceivable cultural or social limitation. Anyone can access them and do whatever they want with them.

The production and distribution of open-source software potentially involves anyone who has one or more computers. Even those who are unable to join in the programming can have access to the finished software or participate in the ongoing development of the programs via feature requests and bug reports.

This "logic" of the non-commercial, global "development of technology," and of the corresponding non-commercial and global "transfer of technology" is not limited to computer technology (software), but is also increasingly found in other areas:

- There is, for example, a "free culture" movement, which "promotes the freedom to distribute and modify creative works in the form of free content or open content by using the internet and other forms of media."[78]
- "Open-source hardware" develops free, universally available models for 3D printers, looms, designs for computer hardware, energy generation technologies, agricultural machinery, and much more.[79]
- Last but not least, "open-source seeds" are being developed, which may or may not be distributed free of charge, but (at least) allow their users to do what they want with the seed they have acquired: "Open-source seed is accessible to everyone. The seed can be multiplied, sold, passed on or bred without restriction."[80]

(b) Approaches to moneyless production and distribution are not only found in "virtual" and/or global contexts of an "economy of solidarity," but also in "urban" spaces. Because of the limited resources available in cities, such forms of "urban solidarity economy" tend to have a peripheral character at present, that is, they are mainly practiced by

[78] https://en.wikipedia.org/wiki/Free-culture_movement (accessed September 29, 2018).

[79] E.g. RepRap, Shapeoko, Thingiverse, Airbike, Ardunio/Raspberry Pi. See the remarks in Siefkes 2013: 14. See also https://en.wikipedia.org/wiki/Open-source_hardware (accessed September 29, 2018). Also worth noting in this context is the Global Village Construction Set, a construction system allowing a large number of tools and machines to be built from a relatively small number of basic components. See http://opensourceecology.org (accessed September 29, 2018).

[80] http://www.opensourceseeds.org (accessed September 29, 2018).

people who cover their basic needs by monetary means (though of course people who have "opted out" can also participate in these economies). Nonetheless, these forms constitute a clear alternative to the stratificatory and economically exclusionary (and also racist, sexist etc.) "logic" of capitalism: the different approaches are essentially about the collective use of spaces, things, and services. The "logic" of these approaches is "sharing," "contributing," "giving." In other words, giving and taking are largely or wholly "uncoupled" here. These solidarity-based forms often take place among strangers, and are thus independent of social, cultural, or other differences.[81]

A basic distinction can be made between forms of collective *production*, practices of collective *distribution*, and practices of shared *use*.

- Forms of *production* are, for example:
  - Community kitchens (*Volxküchen*, "people's kitchens," or "kitchens for all"), where people cook together. The ingredients are organized for free (donated, salvaged from trash). The food is shared with all those who want to eat (regardless of whether they have contributed or not). In practice, however, the food is often handed over with a request for a small donation.
  - *Brotaufstrichkooperativen* ("bread spread cooperatives"): groups jointly produce certain spreads in large quantities and exchange them with each other.
  - Open "urban gardening" or "urban agriculture": volunteers grow something together (e.g. on occupied public land), which is then made available to everyone.
  - "Repair cafés," where people come together to drink coffee and repair things. People with technological skills or interests and amateurs work together to try to fix broken objects.
  - "Open universities," where people come together to get a self-organized education. The wide range of courses offered in such contexts includes philosophical "seminars," as well as cooking, yoga or music, and much more.[82]
- Forms of *distribution* are:
  - "Free stores" or "give-away shops," "book banks," "give boxes" or "free boxes," and "food-sharing cupboards" or "food-sharing

[81] For an insight into the diverse manifestations of non-commercial, solidarity-based forms of reproduction see Preissig 2016; Baier et al. 2016; Baier et al. 2015; *Ich tausch nicht mehr* 2015; Habermann 2009.

[82] For a more detailed account see Habermann 2009: 175ff.

stations": people bring things they no longer need to collection points or facilities where others can take them for free (and without providing anything else in return).
- Internet-based "freecycling": an online variation on the "free economy" or "gift economy," which makes it possible to obtain things beyond one's own immediate radius of movement and also to post requests or "wanted" ads.
- "Give away boxes" (private): people put things they no longer need (or wish to make available to others) in a box at the roadside (usually in front of their house). Others can then help themselves.

- Forms of *use* are:
  - "Fab labs," "maker spaces," or "open workshops": places where people can use machines, equipment and tools (e.g. 3D printers, CNC milling machines, lazer cutters) for free (or for a small fee), to make things that they need for themselves (or for others). In some cases the complex machines themselves are developed as "open-source hardware," or can be used to make such hardware, and if necessary users can access "free" designs.
  - *Nutzergemeinschaften* ("user communities"): people provide each other with things without requesting payment or expecting anything else in return (though membership can be conditional on providing something oneself). The things exchanged and the forms of organization are varied: for example media, tools or video projectors can be used jointly, use can be "closed" (e.g. a household or housing collective), or "open" (e.g. a public online platform). The provision of things (which can be organized in various ways) is fundamentally based on trust, though there are options for "control" (e.g. online user ratings).[83]
  - "Libraries of things" or "borrowing shops": people share things free of charge, especially things that are not used frequently (e.g. waffle irons, tools, guest beds, games, camping equipment). Access is tied to membership, which, in the "free economy" context, is secured by providing an object. Involvement in running the "shop" is also welcomed. (A low membership fee is often also charged.)

[83] See also http://www.projektwerkstatt.de/alternative/konkret_nutzigems.html (accessed September 29, 2018).

The common "etiquette" of these different forms is that one gives what one can (or what one no longer needs), and takes what one needs. At the heart of these approaches is a focus on needs, and on voluntary giving and taking among strangers.

In these contexts of an urban "economy of solidarity," the division of labor is task-related and usually voluntary: anyone who is interested in a "project" can participate in it. (Often projects express their needs to the public.) The allocation of activities within projects occurs spontaneously and without hierarchies (in "do-ocratic" form, as it were). The technology deployed in these contexts proves to be heterogeneous: it ranges from skilled manual work to computers (as means of production, organization and communication) and computer-controlled machines. Ultimately, the people involved decide for themselves which technical resources they wish to use for the implementation of their project.

The individual initiatives and participation in them come about without central planning, purely from people's personal motivations. Viewed from the "observer perspective" of the social sciences, the different approaches can be seen as part of the development of colorful, urban "solidarity economies," infiltrating the capitalist context. A large number of actors with different motivations and social backgrounds operate side by side, each individual often in several contexts, creating a web of "solidarity-based" economic relationships.[84] (If we assume that these people also use open-source software and/or share things on portals, using "free culture," then it can even be said that global webs of "solidarity economies" are forming.)

Unquestionably, this "solidarity-based economy" is still a marginal phenomenon today. But there are various ways in which it could be expanded in the future: either already-existing urban "solidarity economies" could be broadened to include provision for basic needs (as in the fully subsistent "transition towns"), and/or the urban "solidarity economy" could be systematically combined with forms of moneyless "solidarity-based agriculture."[85]

(c) The forms of "open-source" economy and of urban "solidarity economy" presented so far, as well as the many other forms of moneyless "solidarity-based economy" presented, are systematically reflected on and extended in a growing and by now relatively substantial movement, which places the newer concepts of "commons" and "peer production"

[84] This idea, related to alternative economic approaches in general, can also be found in Misik (2016).

[85] For the latter see for example the concept of "bolo'bolo" in P.M. (2015).

at the center of its approach, and attempts to combine the two. Well-known terms and concepts in the framework of this approach are "commons-based peer production," "peerconomy," and "ecommony."[86] In some cases these debates themselves have an impact on practice. Some aspects of the debate will be briefly mentioned here:

1. In the context of these debates or movements, the fundamental concept of "commons" is not understood as a "thing," but as a complex social process:

> Commons are . . . neither specific goods, nor do they constitute a specific form of ownership (e.g. a specific form of collective or public ownership). Still less are they "no man's land" (*res nullius*), an area in which anyone can help themselves or behave as they see fit. Instead they are diverse arrangements for the production, preservation and development of jointly used resources, which we all need in order to live. Or more succinctly: commons *are* not, they are *made*. A crucial element is the realization that resources necessary for our life and our cultural development require fair and sustainable social processes of acquisition; a coexistence that also means existing for one another.
>
> Commons establish and contain a relationship of responsibility toward nature and people other than ourselves.
>
> Helfrich 2013: 2

   Insofar as "commons" is not about particular things (or forms of ownership), but about the "logic" of social processes, the general tendency is to speak of "commoning." This "commoning" is a form of needs-oriented social self-organization, and takes place mainly (and structurally) "beyond the market and the state."
2. In her concept of "ecommony," Habermann emphasizes the "*different* logic" of commons or commoning. According to this, there are initially four basic principles which people (would) have to internalize in a "commons-based" mode of production (principles which can in fact be recognized in a number of social practices, as has become apparent):

   1. Possession rather than ownership: in commons what counts is who actually needs and uses something, and not the right to exclude others or to sell it;

[86] See for example Habermann 2016; Siefkes 2013, 2008; and the article by Habermann in this volume.

2. Share what you can;
3. Contributing rather than exchanging: getting involved because of inner motivation, once access to resources is guaranteed;
4. Openness and voluntariness.

Habermann 2016: 10

3. Another important aspect is the perspective of the "care economy," which aims at the development of a "*different*" motivation than the usual motivation in the context of the capitalist economy. The core concern here is to re-establish practices of mutual help and cooperative, solidarity-based action as natural or self-evident (*selbstverständlich*):

> This is about the elimination of profit logic in favor of a logic of "care" . . . This is not to be confused with altruism; instead it stands for the "rediscovery of the self-evident" . . . : of the fact that most of us get involved as a matter of course when we see the need. "It is self-evident that people, as simultaneously connected and free beings, want to increase more than their personal advantage."
>
> ibid.: 14

> . . . this is about the rediscovery of the self-evident fact that we become active when we think it is necessary, and that we naturally/self-evidently organize ourselves with each other, and not against each other—as becomes apparent in everyday life, in emergency situations, and whenever people outside the market begin to get involved. While at present only those who can outcompete their fellow humans are permitted to become productive for society, the idea here would be to make cooperative action into something that is once again natural/self-evident for society.
>
> ibid.: 26

4. The idea of "commons" (or "commoning") is also connected with the concept of "peer production": "the English term 'peers' refers . . . to a group of equals, who work together voluntarily and on an equal footing."[87]

   This is about a systematic de-hierarchization of social relations: not only is there no longer any central political unit guaranteeing any form of ownership or property, there is also no central political or economic element organizing production and distribution. Instead this is about an informal, "intrinsically motivated" practice

[87] https://commons-institut.org/was-ist-peer-produktion (accessed September 29, 2018).

of self-organized collective production, and about sharing the results of production on the basis of need.

This form of organization substantially extends the concept of "de-centralization," which (only) gradually dissolves centralist hierarchies. In the "logic" of the "network of peers" there is a multitude of open connections between different "points" (see Figure 2).

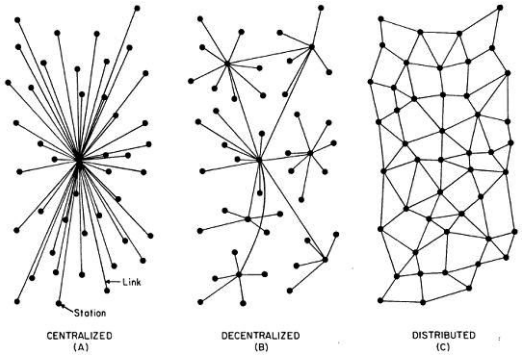

Figure 2 *Source*: Helfrich 2015. (Every effort has been made to trace with copyright holders and obtain permission to reproduce this material. Please do get in touch with any enquiries or any information relation to this image or the rights holder.)

5. In the discourse, the underlying ideas ("logics") of "commons"/ "commoning" and "peer production" are still closely associated with the development of concrete "mechanisms" of the "coordination of action." Here processes are developed which correspond to the logic of "distributed" and "open" systems and of "commoning," such as the organizational principle of IT-supported "stigmergy," i.e. task processing based on cues, as is familiar from Wikipedia:

> Stigmergy is the division of tasks on the basis of cues. In Wikipedia, "red links" point to where another article could be written. There is a to-do list of what is still needed. There is no individual or collective authority that allocates a task to me, instead there are "cues" suggesting what I could do—the decision is mine alone. Self-selection has enormous consequences for motivation. I only choose jobs that I really, really want to do.
>
> This makes it clear that the development of stigmergy requires an absence of material constraints and external control. Stigmergy is reliant on the free development of individuality. If I am forced to choose, that is, if I do not have the choice of not

> choosing, because I have to submit to external constraints (such as earning money), then the effect of stigmergy is limited. Hence stigmergy does not work well for small systems. This will be familiar to anyone who looks at their own to-do list and knows that nobody else is going to come and do these jobs for them . . .
>
> Just like individual self-development, stigmergy relies on the contributions being freely available to everyone. No one voluntarily turns suggestions into solutions if these are then privately appropriated.
>
> http://keimform.de/2013/was-ist-stigmergie/print (accessed September 29, 2018)

"Stigmergic" (or "stigmergetic") coordination of actions is therefore radically open, is based on absolute voluntariness, and thus involves no form of charge or payment, but implies that the results of activity are available to all. The idea is then to use this form of organization *generally* for the organization of production and distribution.[88]

6. "Commoning" in the framework of "peer-economy networks" allows (last but not least) a *different* technology in comparison to the "grassroots approach" and to centralist and large-scale approaches: "commoning" is, *in principle*, technologically open. The aspiration to a consistent focus on needs gives rise to a single criterion, that the technology must be "adapted," but this allows a multitude of concrete forms of technology. So it is not a matter of contrasting *specific* methods, such as "permaculture," automatic machines and computers, or "fabbers"; instead it is about what people want within the framework of a needs-oriented form of production, and what technologies they create in "commoning." The "commons" approach thus proves to be "multi-tech." Tools, machines and computer technology can *in principle* be combined in various ways.[89] (The only technologies excluded are those that are objectively or generally harmful.)

Overall, then, we can retain a few key points which set these approaches apart from all the others presented so far:

- Cooperation on a voluntary basis
- Action based on "intrinsic motivation" (interest in a thing, the natural or "self-evident" human tendency to look after others)

[88] For "stigmergy" see the article by Meretz in this volume.
[89] For technological aspects from the context of the debate about "commons" see Euler and Gauditz 2017: 104; Cropp 2016; Tenenberg 2014.

- Trust, as manifested in the uncoupling of giving and taking
- Trust in people's ability to cooperate or resolve conflicts while acknowledging their differences
- Openness with regard to needs, organizational processes and technologies.

Despite its fundamental appeal, and the fact that it "works" in various respects, the approach is (still) likely to cause a certain unease from the present-day viewpoint. How would it actually be possible to provide for everyone, if individuals (or small communities) can neither provide for themselves nor rely on the supply of industrially produced objects (i.e. provision by "society")?! Here "commoning" would need to prove itself in practice, especially in the collective production and distribution of the basic necessities of life. There is also the question of how complex production processes (e.g. traffic and transport systems, machines and complex tools and devices, the processing of chemicals, large constructions, energy supply, telecommunications, metal processing) can or could be organized among "peers." Another related question is how "competencies" (especially technology, medicine, culture) can be passed on between generations, and how new "competencies" can be developed.[90]

3. Conclusion: Prospects for a "Society After Money"

> *I prefer to affirm the Kantian idea of eternal peace than the idealism of Fichte, in which dynamism becomes an end in itself, if the free action of humans develops unfettered. If one responds to this by worrying about whether a peaceful society would not fall asleep, stagnate, etc., then I would say, for a start, that we can cross that bridge when we come to it. The possibility of the world becoming too wonderful does not seem so very dreadful to me . . .*
>
> Theodor W. Adorno

The preceding remarks have shown that there are currently a large number of different theoretical and practical approaches to post-monetary life. So beyond the diverse practices of "subsistence" that already exist, an enormous quantity of knowledge and experience is developing about how people can

[90] For the problem of the production of complex objects in the peer economy see Mats 2017, 2015. For a critical examination of stigmergy and commoning see also the contribution by Siefkes in this volume.

live (together) *without money*. This is a weighty argument against the assertion that life without money is impossible, because society, without money, would inevitably grind to a halt, descend into totalitarianism, or something of that nature.[91] In contrast, "subsistence" (in a wide range of forms), "free economy," open-source software, "free culture" and so on show that things can be done differently. Here "intrinsic motivations" of action come to the fore, along with the ability to develop various elaborate technologies, and egalitarian and liberal methods of coordinating action. The discussion has thus made it very clear that today we no longer have to ask whether moneyless economic activity is *possible*, but whether it will *happen*, and if so *how* and *when*.

With regard to the existing approaches, one fundamental observation to be made is that all of these are literally only *approaches*: they are first attempts, and not by any means complete "solutions," since they always take place from within capitalism, and are therefore still influenced by it in various ways. From our present point of view it is simply not possible to know what people in a post-monetary society would want, on a material, social, and intellectual/cultural level, and how, as a result, the economy, culture and individuality would develop "after money." Thus, everything that is done or imagined in this direction is "only" ever a beginning, a first step on the way, an attempt to work one's way out, to feel one's way forward into an unknown emancipatory space.[92]

But what is the next step along this path? At present, a wide range of needs, values, and ideas about organization are leading to a correspondingly wide range of practical and theoretical approaches to "society after money." In their diversity, they are often mutually exclusive, raising the question of *whether* and if so *how* the coexistence of different "cultures of the post-monetary" can be imagined. This question already arises with regard to the "process of transformation" out of capitalism. Answering these questions will be an essential part of the journey toward a "society after money."[93] It will have to become clear whether a "society after *money*" (i.e. after money *as capital*) will be a society *without any means of exchange*.

[91] Often the proponents of market-based organization are not concerned with the market *as such*, but merely with the *profit* that can be obtained by means of the market. This is shown by the many examples given above of non-monetary forms of acquisition, production and reproduction *in capitalism*, which are obviously gladly accepted.

[92] Konicz and Rötzer 2014; Klein 2013; Notz 2012; Habermann 2009.

[93] Small-scale and/or radical-ecological approaches, and those based on the peer economy, hardly seem to be generalizable under the conditions of the currently existing forms of division of labor (and the related ecological and technological implications and consequences) and subjectivity (knowledge, needs). This does not mean, however, that such approaches are fundamentally impracticable.

Whatever concrete shape a possible "society after money" will take, it is plain that all the approaches in this direction have always been transformatory movements on *contested* social terrain. Various lines of conflict can be discerned here:

- An *economic* line of conflict runs between the formation and development of "solidarity-based economies" and their appropriation for new strategies of valorization, or between a non-commercial "economy of sharing" and a commercialized "sharing economy" (Metzger 2015; Lobo 2014). Another key area of conflict is the "capitalist permeation of reproduction" (Bauhardt 2012: 7), i.e. the progressive emergence of "care capitalism." Here the development and implementation of a "different logic" of reproduction is, from a feminist perspective, an attempt to overcome not only economic "exploitation," but also patriarchal forms of domination (Fraser 2017: 100).
- *Politically*, the conflict is about defending forms of "solidarity-based economy" against the current policies of growth, which are generally held up as being the only possible option. This is about combatting labor-market policies focused solely on integrating people into paid work, containing the progressive "marketization" of resources, cultures and identities, and fighting for the freedom to develop social "testing grounds" (Helfrich and Bollier 2015).[94] An essential prerequisite for this is finding a solution to the fundamental economic policy dilemma of present-day politics: parliamentary politics will only be able to support alternative/moneyless economies to a very limited extent, as long as it is primarily obliged to support "growth" as the foundation for its own capacity to act—on the basis of a capitalist economic order which it has institutionalized. At the same time, this "growth" generates an ever greater *subjective* and *objective* need for post-capitalist, alternative/moneyless economic methods. To escape from the "growth spiral" (Binswanger), then, we would need *concrete* economic policy strategies of orderly contraction. These, however, do not yet exist (Herrmann 2015b).[95]
- Another essential prerequisite for any increase in social emancipation is the development of pluralist "civil society" cultures. This means that in *social* and *cultural* respects, the conflict is about securing recognition for different ways of life in practical and theoretical contexts, against the spread of exclusionary and discriminatory attitudes. It is also about

[94] For the fight against the capitalist economy in favor of forms of solidarity-based economy see also Gibson-Graham et al. 2013; Klein 2013; P.M. 2012; Internationale Forschungsgemeinschaft für Politische Ökonomie 2011; Bennholdt-Thomsen 2009.

[95] This includes an intensive examination of the possibilities contained in bourgeois constitutions for institutionalizing non-capitalist forms of ownership. See Fisahn 2015.

preserving and expanding a basic secular and democratic consensus, against authoritarian developments.

- Lastly, on an *individual* level, it is vital that anyone with an alternative or emancipatory economic orientation reflect on their own internal capitalism. The history of alternative movements has clearly and repeatedly shown that attempts to break out can fail because of "society," i.e. because of its various manifest power relations, but also because of the "society" that is *in people themselves*, i.e. the internalization of ways of thinking, feeling and perceiving that are shaped by capitalism.[96]

This last item brings us to what I see as a key point: the emergence of a "society after money" will not in the end be decided on *theoretical* terrain, but will depend on the successful development, in the here and now, of forms of practice that give people an inner sense of security. Only then will it be possible to collectively throw off the socio-psychological baggage of capitalist processes of subjectification and break free from the spell of capital—working together but respecting each other's differences (Cooperativa Integral Catalana 2015). This view is supported by the fact that objective certainties are being lost, by the critical and socio-psychological self-reflection of society, and by practical experience of social movements. Specific ideas about organization, including those developed and discussed in the present volume, prove to be a *necessary* but by no means *sufficient* requirement on the path toward a "society after money."

References

Adamczak, Bini (2017), *Communism for Kids*, Cambridge: MIT Press.

Adler, Frank, and Ulrich Schachtschneider (2010), *Green New Deal, Suffizienz oder Ökosozialismus? Konzepte für gesellschaftliche Wege aus der Ökokrise*, Munich: oekom.

Albert, Michael (2003), *Parecon: Life After Capitalism*, London: Verso.

Albert, Michael, and Christian Siefkes (2012/2013), "Future Economy? An Exchange Between Michael Albert and Christian Siefkes." Available online: https://zcomm.org/debates-peercommony-and-parecon/ (accessed December 12, 2017).

Altvater, Elmar (2004), "Eine andere Welt mit welchem Geld? Über neoliberale Kritik der Globalisierungskritik, unbelehrte Ignoranz und Gesells Lehre von Freigeld und Freiland." Available online: userpage.fu-berlin.de/roehrigw/altvater/altvater.pdf (accessed December 12, 2017).

Altvater, Elmar (2012), "Freigeld, Vollgeld, Leergeld," *WOZ*, 43, October 25. Available online: https://www.woz.ch/-331f (accessed December 12, 2017).

[96] Joha 2015; Cropp 2012, 2011; Heide 2007a and b.

Amborn, Hermann (2016), *Das Recht als Hort der Anarchie: Gesellschaften ohne Herrschaft und Staat*, Berlin: Matthes & Seitz.
Anders, Günther (2002), *Die Antiquiertheit des Menschen: Über die Seele im Zeitalter der zweiten industriellen Revolution*, Munich: C. H. Beck.
Avanessian, Armen, ed. (2013), *#Akzeleration*, Berlin: Merve.
Avanessian, Armen, and Robin Mackay, eds. (2014), *#Akzeleration#2*, Berlin: Merve.
Baier, Andrea, Christa Müller, and Karin Werner, eds. (2015), *Stadt der Commonisten: Neue urbane Räume*, Bielefeld: Transcript. Available online: http://www.transcript-verlag.de/978-3-8376-2367-3/stadt-der-commonisten (accessed December 12, 2017).
Baier, Andrea, Tom Hansing, Christa Müller, and Karin Werner, eds. (2016), *Die Welt reparieren: Open Source und Selbermachen als postkapitalistische Praxis*, Bielefeld: Transcript. Available online: http://www.transcript-verlag.de/OpenAccess/download/?fileName=/content/oa/oa9783839433775.pdf (accessed December 12, 2017).
Barbrook, Richard, and Andy Cameron (1997), "Die kalifornische Ideologie," in nettime (ed.), *Netzkritik: Materialien zur Internet-Debatte*, 15–36, Berlin: Edition ID.
Bauer, Leonhard, and Herbert Matis (1989), *Geburt der Neuzeit: Vom Feudalsystem zur Marktgesellschaft*, Munich: dtv.
Bauhardt, Christine (2012), "Feministische Ökonomie, Ökofeminismus und Queer Ecologies—feministisch-materialistische Perspektiven auf gesellschaftliche Naturverhältnisse," *Gender Politik Online: Sozialwissenschaftliches Gender-Portal der Freien Universität Berlin*, April. Available online: http://www.fu-berlin.de/sites/gpo/pol_theorie/Zeitgenoessische_ansaetze/Bauhardtfemoekonomie/Bauhardt.pdf (accessed December 12, 2017).
Bauhardt, Christine (2015), "Feministische Kapitalismuskritik und postkapitalistische Alternativen," *Aus Politik und Zeitgeschichte*, 65 (35–37): 32–39.
BBC (2009), "Poll: Wide Dissatisfaction with Capitalism—Twenty Years after Fall of Berlin Wall." Available online: https://drum.lib.umd.edu/bitstream/handle/1903/10701/BBC_BerlinWall_Nov09_rpt.pdf?sequence=2&isAllowed=y (accessed December 12, 2017).
Bender, Harald, Norbert Bernholt, and Bernd Winkelmann, eds. (2012), *Kapitalismus und dann? Systemwandel und Perspektiven gesellschaftlicher Transformation*, Munich: oekom.
Bennholdt-Thomsen, Veronika (2006), "Subsistenzwirtschaft, Globalwirtschaft, Regionalwirtschaft," in Maren A. Jochimsen and Ulrike Knobloch (eds.), *Lebensweltökonomie in Zeiten wirtschaftlicher Globalisierung*, 65–87, Bielefeld: Kleine.
Bennholdt-Thomsen, Veronika (2009), "Geld kann man nicht essen," *Bioforum Schweiz—Kultur und Politik: Zeitschrift für ökologische, soziale und wirtschaftliche Zusammenhänge*, no. 2, 3–4.
Bennholdt-Thomsen, Veronika (2010), *Geld oder Leben: Was uns wirklich reich macht*, Munich: oekom.

Bennholdt-Thomsen, Veronika (2011), "Die Politik der Subsistenzperspektive," paper presented at congress Perspectives on Matriarchal Politics, St. Gallen, May 12–15. Available online: http://kongress-matriarchatspolitik.ch/upload/Bennholdt-Thomsen.pdf (accessed December 12, 2017).

Bennholdt-Thomsen, Veronika (2015), "Subsistenz ist die Lösung," in Le Monde diplomatique and Kolleg Postwachstumsgesellschaften (eds.), *Atlas der Globalisierung: Weniger wird mehr*, 162–163, Berlin: taz.

Bertelsmann Stiftung (2012), "Kein Wachstum um jeden Preis: Kurzbericht", July. Available online: http://www.bertelsmann-stiftung.de/fileadmin/files/BSt/Presse/imported/downloads/xcms_bst_dms_36359_36360_2.pdf (accessed December 12, 2017).

Bierl, Peter (2012), *Schwundgeld, Freiwirtschaft und Rassenwahn: Kapitalismuskritik von rechts. Der Fall Silvio Gesell*, Hamburg: Konkret.

Bleiberg, Edward (1995), "The Economy of Ancient Egypt," in Jack M. Sasson (ed.), *Civilizations of the Ancient Near East 3*, 1373–1385, New York: Charles Scribners' Sons.

Boldt-Mitzka, Christian (2015), *Historische Theorie der Subsistenz: Grundlagen, Geschichte und Gegenwartsbedeutung selbsterhaltenden Lebens und Arbeitens*. Available online: http://elib.suub.uni-bremen.de/edocs/00104341-1.pdf (accessed December 12, 2007).

Boltanski, Luc, and Ève Chiapello (2005), *The New Spirit of Capitalism*, trans. Gregory Elliott, London: Verso, 2005 [*Le nouvel esprit du capitalisme*, Paris: Gallimard, 1999].

Boyle, Mark (2010), *The Moneyless Man: A Year of Freeconomic Living*, Oxford: Oneworld.

Boyle, Mark (2013), *Moneyless Manifesto: Live Well. Live Rich. Live Free*, East Meon, Hampshire: Permanent Publications. Available online: http://www.moneylessmanifesto.org/why-free/ (accessed December 12, 2017).

Brand, Ulrich, and Markus Wissen (2017), *Imperiale Lebensweise: Zur Ausbeutung von Mensch und Natur in Zeiten des globalen Kapitalismus*, Munich: oekom.

Brodbeck, Karl-Heinz (2012), *Die Herrschaft des Geldes: Geschichte und Systematik*, Darmstadt: Wissenschaftliche Buchgesellschaft.

Brown, Wendy (2015), *Undoing the Demos: Neoliberalism's Stealth Revolution*, New York: Zone Books.

Bundeszentrale für politische Bildung, ed. (2015), *Aus Politik und Zeitgeschichte*, 65 (35–37). Theme: Kapitalismus und Alternativen. Available online: http://www.bpb.de/system/files/dokument_pdf/APuZ_2015-35-37_online.pdf (accessed December 12, 2017).

Busch, Ulrich (2016), "Vollgeld: Geld der Zukunft oder monetäres Experiment à la John Law?," *Berliner Debatte Initial*, no. 1, 113–129.

Cairó-i-Céspedes, Gemma, and David Castells-Quintana (2016), "Dimensions of the Current Systemic Crisis: Capitalism in Short Circuit?", *Progress in Development*, 16 (1): 1–23.

Callinicos, Alex (2003), *An Anti-Capitalist Manifesto*, Cambridge: Polity Press.

Castells, Manuel (2010), *The Rise of the Network Society,* vol. 1 of *The Information Age: Economy, Society and Culture*, Chichester: John Wiley & Sons.
Chang, Ha-Joon (2010), *23 Things They Don't Tell You About Capitalism*, Allen Lane: London.
Chomsky, Noam (1993), *Year 501: The Conquest Continues*, Boston: South End Press.
Chossudovsky, Michel (1997), *The Globalisation of Poverty: Impacts of IMF and World Bank Reforms*, London: Zed Books.
Clay, Alexa (2017), "Like Start-ups, Most Intentional Communities Fail—Why?," *Aeon*, February 28. Available online: https://aeon.co/essays/like-start-ups-most-intentional-communities-fail-why (accessed December 12, 2017).
Cockshott, Paul (2006), "Die Technik des Sozialismus existiert." Available online: http://www.praxisphilosophie.de/cockshott.pdf (accessed December 12, 2017).
Cockshott, Paul, and Allin Cottrell (1993), *Towards a New Socialism*, Nottingham: Spokesman.
Cooperativa Integral Catalana (2015), "Revolución Integral." Available online: http://cooperativa.cat/de/uebersetzung-revolucion-integral/ (accessed December 12, 2017).
Creydt, Meinhard (2016), *46 Fragen zur nachkapitalistischen Zukunft: Erfahrungen, Analysen, Vorschläge*, Münster: Westfälisches Dampfboot.
Crone, Patricia (1989), *Pre-Industrial Societies*, Oxford: Wiley-Blackwell.
Cropp, Jan-Hendrik (2011), "Die post-revolutionäre Möhre: Hier und Jetzt: Solidarische Landwirtschaft auf dem Weg zur Schenkökonomie," *Streifzüge*, 53. Available online: http://www.streifzuege.org/2011/die-post-revolutionaere-moehre-hier-und-jetzt (accessed December 12, 2017).
Cropp, Jan-Hendrik (2012), "Post-kapitalistische Landwirtschaft: Potentiale, Probleme und Perspektiven," *grasswurzelrevolution*, no. 370, 6.
Cropp, Jan-Hendrik (2016), "Endliche Ressourcen als Gemeingut," *untergrund blättle*, May 17. Available online: http://www.xn--untergrund-blttle-2qb.ch/gesellschaft/selbstorganisation_ressourcen_als_gemeingut_3258.html (accessed December 12, 2017).
Crouch, Colin (2015), *The Knowledge Corrupters: Hidden Consequences of the Financial Takeover of Public Life*, Cambridge: Polity Press.
Dahm, Daniel, and Gerhard Scherhorn (2008), *Urbane Subsistenz: Die zweite Quelle des Wohlstands*, Munich: oekom.
Dalton, George (1971), *Economic Anthropology and Development: Essays on Tribal and Peasant Economies*, New York: Basic Books.
Dalton, George (1982), "Barter", *Journal of Economic Issues*, 16 (1): 181–190.
Das Argument (2010), "Gesellschaftliche Planung und solidarische Ökonomie," *Das Argument*, no. 286, 159–219.
Das, Subhendu (2012), "Moneyless Economy." Available online: https://mpra.ub.uni-muenchen.de/39763/1/BRC-Moneyless_Economy.pdf (accessed December 12, 2017).

Das, Subhendu (2014), *Your Soul is Talking to You: Listen Carefully and You Will be Able to Hear*. Available online: https://theoryofsouls.files.wordpress.com/2014/08/soultheory-23nov2016.pdf (accessed December 12, 2017).
Dath, Dietmar (2008), *Maschinenwinter: Wissenschaft, Technik, Sozialismus: Eine Streitschrift*, Frankfurt/M.: Suhrkamp.
Davies, Glyn (2016), *A History of Money*, edited, revised and introduced by Duncan Connors, Cardiff: University of Wales Press.
Davis, Mike (2001), *Late Victorian Holocausts: El Niño Famines and the Making of the Third World*, London: Verso.
Demirović, Alex, Julia Dück, Florian Becker, and Pauline Bader, eds. (2011), *VielfachKrise: Im finanzmarktdominierten Kapitalismus*, Hamburg: VSA.
Deutschmann, Christoph (2001), *Die Verheißungen des absoluten Reichtums: Zur religiösen Natur des Kapitalismus*, Frankfurt/New York: Campus.
Deutschmann, Christoph (2008), *Kapitalistische Dynamik: Eine gesellschaftstheoretische Perspektive*, Wiesbaden: VS.
Devine, Pat (2010), *Democracy and Economic Planning*, Cambridge: Polity Press.
Dieterich, Heinz (2006), *Der Sozialismus des 21. Jahrhunderts: Wirtschaft, Gesellschaft und Demokratie nach dem globalen Kapitalismus*, Berlin: Homilius.
Dunkhase, Helmut (2014), "Alternativen aus dem Rechner." Available online: http://www.helmutdunkhase.de/kassel_mb_online_240714.pdf (accessed December 12, 2017).
Eisenschenk, Herbert (2016), *Experiment Auroville: Leben auf eigene Gefahr*, Munich: Grubbemedia.
Elbe, Ingo, Sven Ellmers, and Jan Eufinger, eds. (2012), *Anonyme Herrschaft: Zur Struktur moderner Machtverhältnisse*, Münster: Westfälisches Dampfboot.
Euler, Johannes, and Leslie Gauditz (2017), "Commons-Bewegung: Selbstorganisiertes (Re)Produzieren als sozial-ökologische Transformation," in Konzeptwerk Neue Ökonomie e.V. and DFG-Kolleg Postwachstumsgesellschaften (eds.), *Degrowth in Bewegung(en): 32 alternative Wege zur sozial-ökologischen Transformation*, 96–107, Munich: oekom.
Eversmann, Ludwig, ed. (2014), *Projekt Post-Kapitalismus: Blueprint für die nächste Gesellschaft*, Hannover: Heise.
Exner, Andreas (2014), "Degrowth and Demonetization: On the Limits of a Non-Capitalist Market Economy," *Capitalism Nature Socialism*, 25 (3): 9–27.
Fasching, Christoph (2010), *Die Gesellschaft 2015: Eine Anleitung zur Bildung einer neuen Gesellschaft in der 5. Dimension*, Munich: ch. falk.
Fellmer, Raphael (2014), *Glücklich ohne Geld: Wie ich ohne einen Cent besser und ökologischer lebte*, Munich: Redline. Available online: http://raphaelfellmer.vahp.de/buch/?format=pdf (accessed December 12, 2017).
Fisahn, Andreas (2015), "Rechtliche Probleme einer Übergangsgesellschaft," in Marxistische Abendschule Hamburg (ed.), *Aufhebung des Kapitalismus: Die Ökonomie einer Übergangsgesellschaft*,186–202, Hamburg: Argument.

Flood, Andrew (2004), "Civilisation, Primitivism and Anarchism," anarkismo.net. Available online: http://struggle.ws/pdfs/andrew/primitivism.pdf (accessed December 12, 2017).

Fotopoulos, Takis (1997), *Towards an Inclusive Democracy: The Crisis of the Growth Economy and the Need for a New Liberatory Project*, London: Cassell Continuum.

Fotopoulos, Takis (2003), "Inclusive Democracy and Participatory Economics," *Democracy & Nature: The International Journal of Inclusive Democracy*, 9 (3): 401–425. Available online: https://www.democracynature.org/vol9/takis_parecon.htm (accessed December 12, 2017).

Fotopoulos, Takis (2005), "The Multidimensional Crisis and Inclusive Democracy," *The International Journal of Inclusive Democracy*, special issue, August. Available online: http://www.inclusivedemocracy.org/journal/pdf%20files/Multidimensional%20Crisis%20Book.pdf (accessed December 12, 2017).

Fotopoulos, Takis (2008), "Inclusive Democracy: Umfassende Demokratie," in Oliver Ressler (ed.), *Alternative Ökonomien: Alternative Gesellschaften*, Vienna: Promedia. Available online: http://www.ressler.at/de/inclusive-democracy-umfassende-demokratie (accessed December 12, 2017).

Frase, Peter (2016), *Four Futures: Life After Capitalism*, London/New York: Verso.

Fraser, Nancy (2017), "Who cares? Teil II: Die Ausbeutung der Sorgearbeit im neoliberalen Kapitalismus," *Blätter für deutsche und internationale Politik*, no. 5, 91–100.

Fresin, Alfred (2005), *Die bedürfnisorientierte Versorgungswirtschaft: Eine Alternative zur Marktwirtschaft*, Frankfurt/M.: Peter Lang.

Gerstenberger, Heide (2017), *Markt und Gewalt: Die Funktionsweise des historischen Kapitalismus*, Münster: Westfälisches Dampfboot.

Gibson-Graham, J. K. (n.d.), "A Diverse Economy: Rethinking Economy and Economic Representation." Available online: http://avery.wellesley.edu/Economics/jmatthaei/transformationcentral/solidarity/solidaritydocuments/diverseeconomies.pdf (accessed December 12, 2017).

Gibson-Graham, J. K. (2006a), *The End of Capitalism (As We Knew It): A Feminist Critique of Political Economy*, Minneapolis: University of Minnesota Press.

Gibson-Graham, J. K. (2006b), *A Postcapitalist Politics,* Minneapolis: University of Minnesota Press.

Gibson-Graham, J. K. (2008), "Diverse Economies: Performative Practices for 'Other Worlds'." Available online: http://www.communityeconomies.org/site/assets/media/Gibson/Diverse%20Economies%202008.pdf (accessed December 12, 2017).

Gibson-Graham, J. K., Jenny Cameron, and Stephen Healy (2013), *Take Back the Economy: An Ethical Guide for Transforming Our Communities*, Minneapolis: University of Minnesota Press.

Gibson-Graham, J. K., James Langdon, and the Community Economies Collective (2013), "Redesign of the 'Economy as an Iceberg' by James Langdon for 'Trade Show' at Eastside Projects," cover of the brochure.

Available online: https://eastsideprojects.org/wp-content/uploads/2015/10/EASTSIDE_PROJECTS_TRADE_SHOW_2013_the-economy-as-an-iceberg_KATHERINE-_GIBSON.pdf (accessed December 12, 2017).
Glatz, Lorenz (2006), "Ein Besuch in Twin Oaks: It isn't Utopia yet," *Contraste*, no. 257, February, 7–8.
Graeber, David (2011), *Debt: The First 5000 Years*, Brooklyn, NY: Melville House.
Habermann, Friederike (2009), *Halbinseln gegen den Strom: Anders leben und wirtschaften im Alltag*, Königstein/Taunus: Ulrike Helmer.
Habermann, Friederike (2016), *Ecommony: UmCARE zum Miteinander*, Sulzbach am Taunus: Ulrike Helmer.
Habermas, Jürgen (1987), *The Theory of Communicative Action*, vol. 2: *Lifeworld and System: A Critique of Functionalist Reason*, trans. Thomas McCarthy, Cambridge: Polity Press.
Hahnel, Robin (2012), *Of the People, By the People: The Case for a Participatory Economy*, Oakland: Soapbox Press.
Harbach, Heinrich (2011), *Wirtschaft ohne Markt: Transformationsbedingungen für ein neues System der gesellschaftlichen Arbeit*, Berlin: Dietz.
Hardt, Michael, and Antonio Negri (2002), *Empire: Die neue Weltordnung*, Frankfurt/New York: Campus.
Hartmann, Evi (2016), *Wie viele Sklaven halten Sie? Über Globalisierung und Moral*, Frankfurt/M.: Campus.
Harvey, David (2003), *The New Imperialism*, Oxford: Oxford University Press.
Heide, Holger (2007a), "Angst und Kapital: Warum Widerstand im Postfordismus so schwierig ist," in Sergio Bologna, Michael Danner, Willi Hajek, Holger Heide, Athanasios Karathanassis, and Lars Meyer (eds.), *Selbstorganisation . . . : Transformationsprozesse von Arbeit und sozialem Widerstand im neoliberalen Kapitalismus*, 35–55, Berlin: Die Buchmacherei.
Heide, Holger (2007b), "Selbsthilfe als Widerstand: Gedanken über einen neuen Umgang mit historischen Erfahrungen," in Sergio Bologna, Michael Danner, Willi Hajek, Holger Heide, Athanasios Karathanassis, and Lars Meyer (eds.), *Selbstorganisation . . . : Transformationsprozesses von Arbeit und sozialem Widerstand im neoliberalen Kapitalismus*, 113–131, Berlin: Die Buchmacherei.
Heide, Holger (2009), "Globalisation of the Work Society: Proposal for a Re-interpretation of the Work Society as a Posttraumatic Syndrome," *Trans-Humanities*, no. 1: 9–38.
Heinrich, Michael (2003), "Geld und Kredit in der Kritik der politischen Ökonomie," *Das Argument*, no. 251, 397–409.
Helfrich, Silke (2013), "Commons: Eine Einführung," *eNewsletter Wegweiser Bürgergesellschaft*, no. 23, December 6. Available online: https://www.buergergesellschaft.de/fileadmin/pdf/gastbeitrag_helfrich_131206.pdf (accessed December 12, 2017).
Helfrich, Silke (2015), "Imagining the (r)urban Commons in 2040," *Commons Transition*, November 23. Available online: http://commonstransition.org/imagining-the-rurban-commons-in-2040/ (accessed December 12, 2017).

Helfrich, Silke, and David Bollier (2015), "Intermezzo 1: Andere Selbstverständlichkeiten in die Welt bringen," in Silke Helfrich, David Bollier, and Heinrich-Böll-Stiftung (eds.), *Die Welt der Commons. Muster gemeinsamen Handelns*, 63–70, Bielefeld: Transcript. Available online: http://www.transcript-verlag.de/978-3-8376-3245-3/die-welt-der-commons (accessed December 12, 2017).

Herrmann, Ulrike (2015a), "Vom Anfang und Ende des Kapitalismus," *Aus Politik und Zeitgeschichte*, 65 (35–37): 3–9.

Herrmann, Ulrike (2015b), "Der schwierige Übergang: Der Kapitalismus ist zerstörerisch, und für den Ausstieg gibt es keinen Plan," in Le Monde diplomatique and Kolleg Postwachstumsgesellschaften (eds.), *Atlas der Globalisierung: Weniger wird mehr*, 104–107, Berlin: taz.

Herrmann, Ulrike (2015c), *Der Sieg des Kapitals: Wie der Reichtum in die Welt kam: Die Geschichte von Wachstum, Geld und Krisen*, Munich: Pieper.

Hollick, Malcolm (1998), "Achieving Sustainable Development: The Eco-Village Contribution: Report on a Study Tour July–December 1997," Center for Water Research Publication: ED 1363 MH, January 1998. Quoted from: http://www.twinoakscommunity.org/ecovillage/87-twin-oaks-as-ecovillage/279-assess-twin-oaks-ecovillage.html (accessed December 12, 2017).

Huisken, Freerk (2016), *Erziehung im Kapitalismus: Von den Grundlügen der Pädagogik und dem unbestreitbaren Nutzen der bürgerlichen Lehranstalten*, Hamburg: VSA.

Ich tausch nicht mehr: Ich will mein Leben zurück: Theorie & Praxis von nichtkommerziellen Projekten (2015) (brochure). Available online: https://www.dropbox.com/s/l82bsqvkt7nz70k/NKL_Broschur_itnm_iwmlz_ak_Ansicht.pdf?dl=1 (accessed December 12, 2017).

Impulszentrum Zukunftsfähiges Wirtschaften (n.d.), "Moral Economy: Was können wir von anderen Kulturen lernen?" Available online: http://www.imzuwi.org/skripten/theorie_335215/II_2.pdf (accessed December 12, 2017).

Institut für Demoskopie Allensbach (2012), "Das Unbehagen am Kapitalismus: Eine Dokumentation des Beitrags von Prof. Dr. Renate Köcher in der Frankfurter Allgemeinen Zeitung Nr. 45 vom 22. Februar 2012." Available online: http://www.ifd-allensbach.de/uploads/tx_reportsndocs/Februar12_Kapitalismus.pdf (accessed December 12, 2017).

Internationale Forschungsgemeinschaft für Politische Ökonomie, ed. (2011), *EU am Ende? Unsere Zukunft jenseits von Kapitalismus und Kommandowirtschaft*, Berlin: Verlag am Park.

Joha (2015), "Zur Auseinandersetzung mit verinnerlichten Herrschaftsverhältnissen oder Stichprobe einer NK*Innerei," in *Ich tausch nicht mehr. Ich will mein Leben zurück. Theorie & Praxis von nichtkommerziellen Projekten*, 102–104.

Keupp, Heiner (2002), "Identitäten in der Ambivalenz der postmodernen Gesellschaft," paper presented at the 6th Benediktbeurer Herbstforum. Available online: http://www.ipp-muenchen.de/texte/identitaeten.pdf (accessed December 12, 2017).

Killjoy, Margaret (2013), "Von postzivilisiertem Leben und Städten, die keine sind: Visionen einer anarchistischen Zukunft," brochure, *Black Mosquito Mailorder*, n.p., Available online: http://issuu-download.tiny-tools.com/pages.php?doc_id=130718161022-cc50ab4a8d1f9c2e818d450a8e96b3da (accessed December 12, 2017).

Kinkade, Kat, with the Twin Oaks Community (2011), "Labor Credit—Twin Oaks Community," in Anitra Nelson and Frans Timmermann (eds.), *Life Without Money: Building Fair and Sustainable Economies*, London: Pluto Press.

Klages, Helmut (1993), *Traditionsbruch als Herausforderung: Perspektiven der Wertewandelsgesellschaft*, Frankfurt/M.: Campus.

Klein, Dieter (2013), *Das Morgen tanzt im Heute: Transformation im Kapitalismus und über ihn hinaus*, Hamburg: VSA. Available online: https://www.rosalux.de/fileadmin/rls_uploads/pdfs/sonst_publikationen/VSA_Klein_Das_Morgen.pdf (accessed December 12, 2017).

Konicz, Tomacz (2017), "Kommunismus = Internet + Räte," *Telepolis*, September 29. Available online: https://www.heise.de/tp/features/Kommunismus-Internet-Raete-3844634.html?seite=all (accessed December 12, 2017).

Konicz, Tomasz, and Florian Rötzer, eds. (2014), *Aufbruch ins Ungewisse: Auf der Suche nach Alternativen zur kapitalistischen Dauerkrise*, Hannover: Heise.

Konzeptwerk Neue Ökonomie e.V. and DFG-Kolleg Postwachstumsgesellschaften, eds. (2017), *Degrowth in Bewegung(en): 32 alternative Wege zur sozial-ökologischen Transformation*, Munich: oekom.

Krysmanski, Hans-Jürgen (2010), "Gesellschaftliche Planung und das System der vernetzten Computer," *Das Argument*, no. 286, 195–204.

Krysmanski, Hans-Jürgen (2012), "Über die Befreiung aller Planungsdaten aus den kapitalistischen Computernetzen mit Hilfe der historisch-materialistischen Entwicklungstheorie," in Alex Demirović, Christina Kaindl, and Rainer Rilling (eds.), *Gegen den Neoliberalismus andenken,* 205–216, Hamburg: VSA.

Kuhlmann, Hilke (2001), "The Illusion of Permanence: Work Motivation and Membership Turnover at Twin Oaks Community," in Barbara Goodwin (ed.), *The Philosophy of Utopia*, 157–171, London/New York: Routledge.

Kurz, Robert (1999), "Die Diktatur der abstrakten Zeit: Arbeit als Verhaltensstörung der Moderne," in Robert Kurz, Ernst Lohoff, and Norbert Trenkle (eds.), *Feierabend! Elf Attacken gegen die Arbeit*, 9–40, Hamburg: Konkret.

Le Goff, Jacques (2011), *Money and the Middle Ages: An Essay in Historical Anthropology*, Cambridge: Polity Press [*Le Moyen Âge et l'argent: essai d'anthropologie historique*, Paris: Perrin].

Lessenich, Stephan (2016), *Neben uns die Sintflut: Die Externalisierungsgesellschaft und ihr Preis*, Berlin: Hanser.

Lobo, Sascha (2014), "Auf dem Weg in die Dumpinghölle," *Spiegel online*. Available online: http://www.spiegel.de/netzwelt/netzpolitik/sascha-lobo-sharing-economy-wie-bei-uber-ist-plattform-kapitalismus-a-989584.html (accessed December 12, 2017).

Marx, Karl (1872), *Das Kapital: Kritik der politischen Ökonomie*, vol. 1, Berlin: Dietz.
Marxistische Abendschule Hamburg, ed. (2015), *Aufhebung des Kapitalismus: Die Ökonomie einer Übergangsgesellschaft*, Hamburg: Argument.
Mason, Paul (2015), *PostCapitalism: A Guide to Our Future*, London: Allen Lane.
Mats, Rüdiger (2015), "Butter bei die Fische!," *konkret*, no. 9, 58–59.
Mats, Rüdiger (2017), "Termiten aller Länder, vereinigt euch!," *konkret*, no. 1, 36–38.
Metzger, Reiner (2015), "Teilen, die andere Ökonomie," in Le Monde diplomatique and Kolleg Postwachstumsgesellschaften (eds.), *Atlas der Globalisierung: Weniger wird mehr*, 146–149, Berlin: taz.
Meyer, Lars (2007), "Arbeit und kommunikatives Handeln in post-bürokratischen Organisationen: Über Grenzverschiebungen zwischen System und Lebenswelt in der post-industriellen Ökonomie," in Hanno Pahl and Lars Meyer (eds.), *Kognitiver Kapitalismus: Soziologische Beiträge zur Theorie der Wissensökonomie*, 97–134, Marburg: Metropolis.
Mies, Maria (1994), "Brauchen wir eine neue 'Moral Economy'?," *Politische Ökologie*, special issue, 6, 18–21.
Mies, Maria (2003), "Den kapitalistisch-patriarchalen Eisberg abschmelzen, neue Subsistenz-Lebenswelten aufbauen, Teil II," *Infobrief 11: WTO, IWF, Weltbank, GATS . . . Was sind die Alternativen? Teil II*, 19–26.
Mikl-Horke, Gertraude (1999), *Historische Soziologie der Wirtschaft: Wirtschaft und Wirtschaftsdenken in Geschichte und Gegenwart*, Munich: Oldenbourg.
Misik, Robert (2016), *Kaputtalismus: Wird der Kapitalismus sterben, und wenn ja, würde uns das glücklich machen?*, Berlin: Aufbau.
Moore, John (n.d.), "A Primitivist Primer," *Green Anarchist* (no further information known). Available online: http://www.azinelibrary.org/approved/primitivist-primer-1.pdf (accessed December 12, 2017).
Mosley, Fred, ed. (2005), *Marx' Theory of Money: Modern Appraisals*, New York: Palgrave.
Müller, Horst (2007), "Alternativkonzepte der politischen Ökonomie: Sozialismus des 21. Jahrhunderts?," in Horst Müller (ed.), *Die Übergangsgesellschaft des 21. Jahrhunderts: Kritik, Analytik, Alternativen*, 204–266, Norderstedt: BoD. Available online: http://www.praxisphilosophie.de/mueller_uebergang.pdf (accessed December 12, 2017).
Nelson, Anitra (2012), "Non-market Socialism: Life Without Money. An Interview with Anitra Nelson." Available online: https://radicalnotes.org/2012/12/30/non-market-socialism-life-without-money-an-interview-with-anitra-nelson/ (accessed December 12, 2017).
Nelson, Anitra (2016), "A Non-market Ecosocialist Exit from Capitalism", paper presented at the 7th Annual Conference in Political Economy, "Political Economy: International Trends and National Differences," September 7–9, 2016, School of Economics and Management, University of Lisbon, Lisbon (Portugal). Available online: http://iippe.org/wp/wp-content/uploads/2015/10/Anitra-Nelson-IIPPE-Paper-2016.pdf (accessed December 12, 2017).

Neupert-Doppler, Alexander (2016), "Computer-Sozialismus—Zwischen technokratischer Ideologie & konkreter Utopie," *Zeitschrift für kritische Sozialtheorie und Philosophie*, 3 (2): 108–130.
Notz, Gisela (2012), *Theorien alternativen Wirtschaftens: Fenster in eine andere Welt*, Stuttgart: Schmetterling.
Pahl, Hanno (2008), *Das Geld in der modernen Wirtschaft: Marx und Luhmann im Vergleich*, Frankfurt/M.: Campus.
Pew Research Center (2012), "Pervasive Gloom About the World Economy: Faith in Hard Work, Capitalism Falter, But Emerging Markets Upbeat." Available online: http://assets.pewresearch.org/wp-content/uploads/sites/2/2012/07/Pew-Global-Attitudes-Project-Economic-Conditions-Report-FINAL-July-12-2012.pdf (accessed December 12, 2017).
Pias, Claus (2004), "Der Auftrag: Kybernetik und Revolution in Chile," in Daniel Gethmann and Markus Stauff (eds.), *Politiken der Medien*, 131–154, Zurich/Berlin: Diaphanes.
Pirenne, Henri (2009), *Stadt und Handel im Mittelalter*, Cologne: Anaconda.
P.M. (2012), *Kartoffeln und Computer: Märkte durch Gemeinschaften ersetzen*, Hamburg: Edition Nautilus.
P.M. (2015), *bolo'bolo: Urfassung mit Nachbemerkung*, Zurich: Paranoia City.
Polanyi, Karl (2001), *The Great Transformation: The Political and Economic Origins of Our Time,* Boston: Beacon Press [first published 1944].
Preissing, Sigrun (2016), *Beitragen und äquivalentes Tauschen: Alternatives Wirtschaften*, Sulzbach am Taunus: Ulrike Helmer.
Reinhard, Wolfgang (2016), *Die Unterwerfung der Welt: Eine Globalgeschichte der europäischen Expansion 1415—2015*, Munich: C.H. Beck.
Ressler, Oliver, ed. (2008), *Alternative Ökonomien: Alternative Gesellschaften*, Vienna: Promedia.
Rethy, Katalin (2014), "Agroecological System Analysis of the Krishna-Valley in Hungary," MSc thesis, Wageningen University. Available online: http://edepot.wur.nl/396656 (accessed December 12, 2017).
Rieder, Kerstin, and G. Günter Voß (2010), "The Working Customer: An Emerging New Type of Consumer," *Psychologie des Alltagshandelns/Psychology of Everyday Activity*, 3 (2): 1–10.
Rifkin, Jeremy (2014), *The Zero Marginal Cost Society: The Internet of Things, the Collaborative Commons, the Eclipse of Capitalism*, New York: Palgrave Macmillan.
Roth, Johanna (2011), "Das Glück der kleinen Dinge: Von Stundenplänen und Arbeitsguthaben," *OYA*, no. 8. Available online: http://www.oya-online.de/article/read/405-.html (accessed December 12, 2017).
Sandel, Michael J. (2012), *What Money Can't Buy: The Moral Limits of Markets*, New York: Farrar, Straus and Giroux.
Sandleben, Günter (2007), "Sozialismus des 21. Jahrhunderts: Mehr Schein als Sein: Über den bürgerlichen Gehalt in der aktuellen Sozialismusdebatte," Available online: www.guenther-sandleben.de/mediapool/57/574173/data/Soz_Mehr_Schein_.doc (accessed December 12, 2017).

Sandleben, Günter and Paul Cockshott (2007), "Sozialismus des 21. Jahrhunderts: Eine Diskussion zwischen Paul Cockshott und Guenther Sandleben." Available online: www.guenther-sandleben.de/mediapool/57/574173/data/Cockshott_Sandleben.doc (accessed December 12, 2017).

Sandström, Anders (2016), *Anarchist Accounting: Accounting Principles for a Participatory Economy*, London: Glowbox Design.

Schäfer, Franz (2005), "Die Produktion Freier Software als Beispiel für Kooperation statt kapitalistischer Konkurrenz." Available online: http://mond.at/texte/soak05_freie_software.html (accessed December 12, 2017).

Schäfer, Jens, and Nikola Winter (2010), "Ein sozioökonomisches Konzept: Die Ressourcenbasierte Wirtschaft: Plädoyer für den Wandel unserer globalen Gesellschaft." Available online: https://archiv.zeitgeistmovement-frankfurt.de/dokumente/Die%20Ressourcenbasierte%20Wirtschaft-Ein%20soziooekonomisches%20Konzept%20%28lang%29.pdf (accessed December 12, 2017).

Scherhorn, Gerhard, Beate Schöne, Daniel Dahm, and Jonas Rabinovitch (1999), "Subsistenz—der unbekannte Teil der Wirtschaft," *Future Heft*, no. 3. Quoted from http://www.danieldahm.de/DDC/Downloads_files/Dahm%20et%20al.%20Subsistenz%20%E 2%80%93%20der%20unbekannte%20Teil%20der%20Wirtschaft.%20future%201999_2.pdf (accessed December 12, 2017).

Schheub, Ute (2015), "Können wir anders?," *Zeitpunkt*, no. 139, September/October, 11–13. Available online: http://www.zeitpunkt.ch/fileadmin/download/ZP_139/10_Koennen_wir_anders_US_139.pdf (accessed December 12, 2017).

Schilk, Jochen (2010), "Maximale Selbstbestimmung?," *OYA*, no. 4. Available online: http://www.oya-online.de/article/read/183-maximale_selbstbestimmung.html (accessed December 12, 2017).

Schimank, Uwe (2008), "Kapitalistische Gesellschaft—differenzierungstheoretisch konzipiert," paper presented at the conference of the economic sociology section of the German Sociological Association, "Theoretische Ansätze der Wirtschaftssoziologie", February 2008, Berlin. Manuscript.

Schwermer, Heidemarie (2015), *Das Sterntalerexperiment: Mein Leben ohne Geld*, Norderstedt: BoD.

Science & Society (2012), *Designing Socialism: Visions, Projections, Models*, special issue, guest editor Al Campbell, 76 (2), April.

Scott, James C. (2009), *The Art of Not Being Governed: An Anarchist History of Upland Southeast Asia*, New Haven, CT: Yale University Press.

Siebert, Patrick, Thomas Herzig, and Walter Siebert (2014), *Schenkökonomie: Anleitung für eine geldlose Welt*. Available online: http://www.xn--schenkkonomie-nmb.org/wp-content/uploads/2015/01/schenkbuchwebversion.pdf (accessed December 12, 2017).

Siefkes, Christian (2008), *Beitragen statt tauschen: Materielle Produktion nach dem Modell der Freien Software*, Neu Ulm: AG Spak.

Siefkes, Christian (2013), "Freie Quellen oder wie die Produktion zur Nebensache wurde", in jour fix initiative berlin (ed.), *"etwas fehlt": Utopie, Kritik und Glücksversprechen*, Münster: edition assemblage, 255–272. Quoted from http://keimform.de/wp-content/uploads/2013/04/jourfixe-freie-quellen.pdf (accessed December 12, 2017).

Solidarity Federation (2003), *The Economics of Freedom: An Anarcho-syndicalist Alternative to Capitalism*, SolFed Booklets. Available online: http://www.solfed.org.uk/sites/default/files/uploads/the-economics-of-freedom.pdf (accessed December 12, 2017).

Srnicek, Nick, and Alex Williams (2013), "#Accelerate: Manifesto for an Accelerationist Politics," *Critical Legal Thinking*, May 14. Available online: http://criticallegalthinking.com/2013/05/14/accelerate-manifesto-for-an-accelerationist-politics/ (accessed December 12, 2017).

Srnicek, Nick, and Alex Williams (2015), *Inventing the Future: Postcapitalism and a World Without Work*, London/New York: Verso.

Statistisches Bundesamt, ed. (2015a), *Zeitverwendungserhebung: Aktivitäten in Stunden und Minuten für ausgewählte Personengruppen 2012/2013.* Available online: https://www.destatis.de/DE/Publikationen/Thematisch/EinkommenKonsumLebensbedingunge n/Zeitbudgeterhebung/Zeitverwendung5639102139004.pdf?_blob=publicationFile (accessed December 12, 2017).

Statistisches Bundesamt, ed. (2015b), "Wie die Zeit vergeht: Ergebnisse zur Zeitverwendung in Deutschland 2012/13." Available online: https://www.destatis.de/DE/PresseService/Presse/Pressekonferenzen/2015/zeitverwendung/Pressebroschuere_zeitverwendung.pdf?_blob=publicationFile (accessed December 12, 2017).

Stengel, Oliver (2016), *Jenseits der Marktwirtschaft: Ökonomie im 21. Jahrhundert*, Wiesbaden: Springer.

Stowasser, Horst (2007), *Freiheit pur! Die Idee der Anarchie, Geschichte und Zukunft*, Hamburg: Edition Nautilus.

Stowasser, Horst (2008), "Anarchie: Eine andere Grammatik des Lebens," in ZEGG Forschungs- und Bildungszentrum (ed.), *ZEGG Reader 2008*, 46–53, Belzig: Eigenvertrieb. Available online: https://www.zegg.de/images/reader/ZEGG-Reader-2008.pdf (accessed December 12, 2017).

Stowasser, Horst (2009), "Die höchste Ordnung überhaupt," *Zeitpunkt*, no. 101, 6–9.

Stützle, Ingo (2007), "Dem Wert auf der Spur: Von der Unmöglichkeit, den Wert zu messen, ohne sich einen abzubrechen: Eine Kritik der Äquivalenzökonomie und ihrer Kritiker," *Z. Zeitschrift Marxistische Erneuerung*, no. 71, September, 154–163.

Tellinger, Michael (2013), *Ubuntu Contributionism: A Blueprint for Human Prosperity*, South Africa: Zulu Planet Publishers.

Tenenberg, Josh (2014), "Technik und Commons," in Silke Helfrich and Heinrich-Böll-Stiftung (eds.), *Commons: Für eine neue Politik jenseits von Markt und Staat*, 112–121, Bielefeld: Transcript. Available online: http://www.

transcript-verlag.de/978-3-8376-2835-7/Commons (accessed December 12, 2017).
The Zeitgeist Movement (n.d.), "Eine Ressourcenbasierte Wirtschaft." Available online: https://zeitgeistmovement.de/wissen/ressourcenbasierte-wirtschaft/ (accessed December 12, 2017).
Türcke, Christoph (2015), *Mehr! Philosophie des Geldes*, Munich: C. H. Beck.
van Dyk, Silke (2009), "Gegenstrategien als (neue) Systemressource des Kapitalismus? Zur Problematisierung einer populären Zeitdiagnose," *Prokla*, no. 157, 663–680.
Vaughan, Genevieve (1997), *For-Giving: A Feminist Criticism of Exchange*, Austin, TX: Plainview Press.
Vaughan, Genevieve (2016), *Homo Donans: For a Maternal Economy*, Milan: VandA ePublishing.
Virno, Paulo (2004), *A Grammar of the Multitude: For an Analysis of Contemporary Forms of Life*, trans. Isabella Bertoletti, James Cascaito, and Andrea Casson, Los Angeles: Semiotext(e). [*Grammatica della moltitudine: Per una analisi delle forme di vita contemporanee*, Soveria Mannelli: Rubbettino, 2001].
Voß, Elisabeth (2015), *Wegweiser Solidarische Ökonomie: Anders Wirtschaften ist möglich!*, Neu Ulm: AG Spak.
Wagner, Felix (2014), *Gelebte Versuche einer Kultur der Nachhaltigkeit: Psychologische Aspekte von Ökodörfern als Reallabore der Transformation*, Universität Freiburg. Available online: https://freidok.uni-freiburg.de/dnb/download/938 (accessed December 12, 2017).
Wallerstein, Immanuel, and Horst Müller (2010), *Systemkrise: Und was jetzt? Utopistische Analysen* (Supplement der Zeitschrift Sozialismus), Hamburg: VSA.
Weber, Beat (2015), "Geldreform als Weg aus der Krise? Ein kritischer Überblick auf Bitcoin, Regionalgeld, Vollgeld und die Modern Money Theory," *Prokla*, no. 179, 217–236.
Winker, Gabriele (2015), *Care Revolution: Schritte in eine solidarische Gesellschaft*, Bielefeld: Transcript.
Wray, L. Randall (2012), "Introduction to an Alternative History of Money," Levy Economics Institute of Bard College, Working Paper No. 717. Available online: http://www.levyinstitute.org/pubs/wp_717.pdf (accessed December 12, 2017).
Wright, Erik Olin (2010), *Envisioning Real Utopias*, London: Verso.
Zelik, Raul (2011), *Nach dem Kapitalismus? Perspektiven der Emanzipation oder: das Projekt des Communismus anders denken*, Hamburg: VSA.
Zima, Peter V. (2016), *Moderne/Postmoderne*, Stuttgart: UTB.

Part 2

Concept and Crisis of Money

2.1

The Elephant in the Room: The Money Commodity and Its Mysteries

Ernst Lohoff

1. The Fundamental Error in the Prevailing Concept of Money

Anyone who wants to know what "our" economy is made of can open the Brockhaus encyclopedia and find the following definition: "Economy provides material sustenance and protection for the life of the individual or multiplicity of people. Its task and objective are the continual satisfaction of the human need for goods and services." According to this generally accepted interpretation, modern, commodity-producing society is distinct from all other historical modes of production only to the extent that it is particularly effective at managing the supposedly trans-historical substance of all economic activity: providing people with goods.

Even if economists have always had a penchant for Robinsonades, people never produce for themselves in isolation. On the contrary, production always has a social context and people always rely on the products of others to meet their own needs. The prevailing thinking only recognizes one rational form of access to others' products: exchange. In a society in which the division of labor is a highly significant organizational element, the trading of goods via exchange presupposes the existence of money.

Accordingly, it is always taken for granted that relations between economic subjects and, indeed, all economic processes are expressed monetarily.

We are all aware that money cannot be eaten and it does not satisfy any other sensual needs. As such, the prevailing thinking about economy is based on two premises that do not fit comfortably together. On one hand, it lumps capitalist wealth in with produced consumer goods and the needs they satisfy. On the other, it always portrays capitalist wealth in the immaterial form of pure quantities of money. These two perspectives can only be reconciled if we assume a particular concept of money that treats it as an element that is external to commodity wealth yet also eliminates from capitalist wealth the

very universal form by which all capitalist wealth is expressed. Rendered harmless as the "lubricant of the economy," money is superficially set off against actual wealth.

We have only to look to Adam Smith to find capitalism interpreted as a mode of production that is oriented toward human need. In the 1760s, he told his students in Glasgow that, "The consumptibility, if we may use the word, of goods, is the great cause of human industry" (2009: 199). According to him, economy is therefore focused on the concrete, material use of produced objects. The "two-worlds theory," according to which money and commodities are understood as essentially different, can also be traced back to the father of classical economics. In his magnum opus, he energetically stressed that, "The great wheel of circulation [i.e. money] is altogether different from the goods which are circulated by means of it" (1982: 385). He does not count it as part of capitalist wealth but rather merely as something that facilitates the exchange of goods. Interpreting it as such, Smith did not allow himself to be misled by the fact that a significant portion of the means of circulation in his own time consisted of gold coins. He obviously regarded the materials that were used to mint them as potential constituents of commodity wealth. But because he located the essence of the commodity in its concrete, material use, that precious metal was only really a commodity to the extent that it was actually used to satisfy material needs, such as when it was used as raw material for jewelry or fillings for teeth. Minting coins, by contrast, meant sending the precious metals used in that process into exile from the world of commodities. As a mere means of exchange (and thus applied to purely social uses and eliminated from application to material objectives), gold becomes a deactivated commodity.[1] It ceases to be part of social wealth and instead is juxtaposed with it as a foreign object.

The study of economics has undergone many upheavals since the time of Adam Smith. Nonetheless, both the mystification of the capitalist mode of production as a needs-oriented economic system as well as the attendant perception of a fundamental difference between money and commodity have always been upheld. This is due to the purely functionalist conception of money in contemporary economics. The prevailing economic thought assumes that money, ostensibly a mere token, is essentially different from the commodity that it confronts. At the same time, money, defined by its functions, shrivels to an entity that mediates between commodities sold on goods markets.

[1] Gold that has been deactivated as a commodity can be reactivated. The coins simply have to be melted down again and added to a consumptive application.

The three functions classically ascribed to money under the generally accepted understanding of what money is (a means of payment, value storage, or a measure of value) always present it as a mere tool for the movement of commodities without any meaning beyond that. As a universal means of payment, money multiplies the number of potential exchange partners to include any economic subject.[2] Moreover, money's value-storage function enables it to chronologically separate sale and purchase: thanks to money, the seller need not simultaneously be a buyer and can expand his or her exchange options to include commodities that are not even currently on the market. As for money's function as a unit of accounting or a measure of value, this element is presented as subordinate to the supposed primacy of goods and their use. In fulfilling these functions, money puts commodity subjects in a position to compare their respective goods with any other goods and, as such, produces the commodity world's *ideal* unit. Measured in money, all commodities are rendered qualitatively equal.

Since the days of Adam Smith, this unchanging origin myth has supported the notion that money is simply a means for the movement of commodities. The emergence of money is a direct byproduct of exchange and, in turn, the need for exchange is directly tied to the social division of labor:

> But when the division of labor first began to take place, this power of exchanging must frequently have been very much clogged and embarrassed in its operations. . . . The butcher has more meat in his shop than he himself can consume, and the brewer and the baker would each of them be willing to purchase a part of it. But they have nothing to offer in exchange, except the different productions of their respective trades, and the butcher is already provided with all the bread and beer which he has immediate occasion for.
>
> Smith 2007: 15

[2] Bourgeois economics assumes that the decomposition [Auflösung] of society into discrete private producers is always the natural order of things. Accordingly, it can only visualize one alternative to money (namely barter [Naturaltausch]) through which partial producers [Teilproduzente] A and B can mutually accept one another's commodities. This constructed, moneyless relation of equivalence is apparently highly deficient relative to monetary relations. Accomplishing such an exchange requires commodity owner A to find precisely the commodity owner B who is looking for the commodity that A wants to dispense and who simultaneously has on offer the commodity that A wants. Such an encounter is extremely unlikely. Money's ability to override the need for complementarity, on one hand, and the capacity of each economic subject to divide purchase and sale between different partners, on the other hand, are what make universal commodity exchange possible at all.

Clever people allegedly invented money in response to this malaise. Money specifically allows exchange subjects to do away with the compulsion toward a complementarity of needs and to divide purchase and sale between different partners.

2. Money as the Form by which Abstract Wealth Is Expressed

This origin myth (which is tied to the functionalist concept of money) assumes that producers have always produced as isolated individuals who only encounter one another at the marketplace. Where traditional societies are concerned, that idea is completely absurd. As Polanyi articulated in his classic *The Great Transformation*, the production of material wealth in pre-capitalist societies was actually embedded in relations of personal dependency. These relations essentially structured the content and organization of the production and distribution of produced goods. The history of capitalism's constitution amounts to the disentangling of economic activity from this context and transforming society into a system of "unsocial sociability" (Kant). Smith and his successors have projected and continue to project genuinely capitalist conditions onto the past.

Marx criticized not only the fact that bourgeois economics treats exchange as an eternal fact of nature. He also saw the decomposition of society into a collection of discrete private producers as the fundamental characteristic of the capitalist mode of production. This characteristic forms the logical starting point for his analysis in *Capital*. Right in the first chapter, he explains the far-reaching consequences for societal structure of people acting as discrete private producers and leaving it to the products of their labor to establish social cohesion. People's sociality slips into their products and encounters them as a relationship of things and, consequently, as an alien and external force.

Because members of a capitalist society only relate to one another as private producers and exchange subjects—i.e. only through the mediation of their products—these products develop an independent existence "abounding in metaphysical subtleties and theological niceties" (Marx 1990: 163).

Obviously the products of human hands do not cease to be useful things that satisfy material needs, even under capitalism. A piece of paper produced under capitalism is still useful for writing and flour produced under capitalism can still be used for baking.

But that utility is neither a commodity's only distinction nor is it, as bourgeois economics has assumed from the outset, its most important one. Once it is transformed into a commodity, a simple human product becomes a "social thing" (165) and, consequently, a thing that "transcends sensuousness" (163). As the instance that creates this social context in the first place, not only does wealth production consequently have a higher status than any other mode of production under capitalism but the transformation of the products of labor into agents of social mediation also fundamentally alters the *content* of social wealth. This process is synonymous with the emergence of a second kind of wealth, which does not exist as such in other social formations and is fundamentally different from tangible material wealth: abstract wealth or wealth in value. This second, transcendental, genuinely capitalist type of wealth and its reproduction are the alpha and omega of modern economic life. For its part, the commodity only constitutes social wealth in its quality as a bearer of value and not in its use value.

As the dominance of value at the surface of the economic process makes clear, and as everybody already knows (apart from specialized economists who spend their time tinkering with model worlds): if no money is earned in the production of apples or automobiles, then those products have lost their meaning and are scrapped. The comprehensive, decisive moment in the capitalist economy is by no means when a product is used or satisfies a need, as is assumed in mainstream economics, the heir to the fundamental error of classical political economy. Rather, it is exclusively that moment when value is generated and reproduced. But that means that the established concept of money assumes an inverted understanding of the relationship between money and the commodities sold on goods markets. Money is not simply a medium that lacks any economic significance of its own. Rather, distinct goods-market commodities, with their concrete use value, represent nothing more than a transitory way station in the self-justifying movement that constitutes the transformation of money into more money. The production of goods-market commodities and their distribution is only a necessary byproduct of capital circulation, which uses money as its starting and end points.

Precisely because money, as a purely social element, has no material use value, it represents "the exchange value of all commodities" (Marx 1970: 48)—the actual form in which abstract wealth is expressed. And because Marx understood capitalist wealth as abstract wealth, for him (contrary to the classical understanding), money forms an integral component of capitalist wealth.

3. Money: The Segregated Universal Commodity

In volume I of *Capital*, Marx explains what he sees as the fundamental difference between his critique of political economy and that of classical economists:

> It is one of the chief failings of classical economy that it has never succeeded, by means of its analysis of commodities, and in particular of their value, in discovering the form of value which in fact becomes exchange-value.
>
> Even its best representatives, Adam Smith and Ricardo, treat the form of value as something of indifference, external to the nature of the commodity itself. The explanation for this is not simply that their attention is entirely absorbed by the analysis of the magnitude of value. It lies deeper. The value-form of the product of labor is the most abstract, but also the most universal form of the bourgeois mode of production; by that fact it stamps the bourgeois mode of production as a particular kind of social production of a historical and transitory character. If then we make the mistake of treating it as the eternal natural form of social production, we necessarily overlook the specificity of the value-form, and consequently of the commodity-form together with its further developments, the money form, the capital form, etc. We therefore find that economists who are entirely agreed that labor-time is the measure of the magnitude of value, have the strangest and most contradictory ideas about money, that is, about the universal equivalent in its final form. This emerges sharply when they deal with banking, where the commonplace definitions of money will no longer hold water.
>
> Marx 1990: 174, f.34

It is no coincidence that Marx immediately refers to the question of money when he locates the fundamental weakness of classical economics in its misunderstanding of the question of the value form. Taking an analysis of the value form as the starting point for an investigation into the capitalist mode of production opens up an approach to the question of money that fundamentally differs from the interpretation of the classical economists. They and their successors derive money from exchange. According to them, it only exists due to a need for a medium that can facilitate the trading of consumer goods. By contrast, from the perspective of Marx's value-form analysis, money arises directly from the commodity's internal contradictions.

The labor of private producers (the logical starting point for Marxian argumentation) already contains this contradiction, which expresses itself

through its dual character. On one hand, the production of cars, custard powder, or cobblestones is enacted through concrete labor with particular content. That concrete labor generates the use value of each specific commodity, which is what distinguishes it from other commodities. In turn, that distinction is the precondition for finding a buyer for that commodity who is interested in its specific material characteristics. On the other hand, under capitalism, labor develops a purely social dimension, namely abstract universal labor, in which the content of any concrete activity is erased and reduced to the spectral content of abstract, socially necessary labor time. The reason for this lies in the fragmentation of the social context into isolated private producers who associate with one another by means of the fact that their privately produced products are placed on the same level and share a common denominator. From this perspective, commodities' social dimension consists in their representation of a specific sum of exchange value, or value. To put it another way, social mediation occurs via the products of labor and, consequently, via labor itself (see Postone 1993: 148–157) and it is only with this in mind that there can be any discussion of the fact that abstract labor forms the substance of value. A substance therefore only has value because it represents a particular social relationship—the relationship of isolated private producers. And just like that relationship, value and the substance of value have a historically specific character, which is to say that they are only valid under the terms of capitalist social formation.

The fundamental contradiction—that social labor is executed privately and only mediated via the placement of labor's products in relation to one another—already implies that this mediation can fail. Individual private labor can only ever be a formal component of the social relations of production on condition that it produces its products as commodities. Yet in its quantitative dimension (i.e. as an expression of a particular value sum), the expenditure of individual labor power is never *a priori* a value component of the social production of wealth. Social recognition of applied labor time is only determined *ex post* in the encounter between the various products of discrete private labor on the market:

> Social labor-time exists in these commodities in a latent state, so to speak, and becomes evident only in the course of their exchange. The point of departure is not the labor of individuals considered as social labor, but on the contrary the particular kinds of labor of private individuals, i.e., labor which proves that it is universal social labor only by the supersession of its original character in the exchange process. Universal social labor is consequently not a ready-made prerequisite but an emerging result.
>
> Marx 1970: 45

In order for the latent social labor time that exists within a commodity to be able to manifest itself as value, it must be exchanged for another commodity and its exchange value must be materialized in the use value of the received commodity.[3] The compulsion to first shed any particular, limited, concrete form in order to realize a commodity's distinct social significance as a bearer of exchange value applies to each specific commodity equally. Meanwhile, this shared inadequacy forces commodities to free one of their own from this deficiency and allow it to stand alone. This segregated commodity has the particular use value of representing the exchange value of each commodity relative to every other commodity. It transforms into the queen of all commodities, the commodity *par excellence*: it becomes money. Marx summarized the outcome as follows:

> Thus the contradiction inherent in the commodity as such, namely that of being a particular use value and simultaneously universal equivalent, and hence a use-value for everybody or a universal use-value, has been solved in the case of this one commodity. Whereas now the exchange-value of all other commodities is in the first place presented in the form of an ideal equation with the commodity that has been set apart, an equation which has still to be realized; the use-value of this commodity, though real, seems in the exchange process to have merely a formal existence which has still to be realized by conversion into actual use-values. The commodity originally appeared as commodity in general, as universal labor time materialized in a particular use-value. All commodities are compared in the exchange process with the one excluded commodity which is regarded as commodity in general, *the commodity*, the embodiment of universal labor-time in a particular use-value. They are therefore as *particular* commodities opposed to one particular commodity considered as being the *universal* commodity. . . . The particular commodity which thus represents the exchange-value of

[3] A commodity that does not manage to enter circulation cannot realize its social relevance. *Its value therefore does not exist independently of its circulation. This, however, does not mean that circulation only constitutes value after the fact. Rather, the sphere of circulation brings about the transformation of the production of goods into a means for producing value*. That is the underlying logic when Marx writes: "There is an antithesis, immanent in the commodity, between use-value and value, between private labor, which must simultaneously manifest itself as directly social labor, and a particular concrete kind of labor which simultaneously counts as merely abstract universal labor, between the conversion of things into persons and the conversion of persons into things; the antithetical phases of the metamorphosis of the commodity are the developed forms of motion of this immanent contradiction" (Marx 1990, 209).

> all commodities, that is to say, the exchange-value of commodities regarded as a particular, exclusive commodity, constitutes *money*.
>
> Marx 1970: 48

Marx believed he had solved money's riddle with his analysis of the sorting out of an absolute commodity.[4] His remarks on monetary theory in his critiques of economics focus on this fundamental problem:

> The principal difficulty in the analysis of money is surmounted as soon as it is understood that the commodity is the origin of money. After that it is only a question of clearly comprehending the specific form peculiar to it. This is not so easy because all bourgeois relations appear to be gilded, i.e., they appear to be money relations, and the money form, therefore, seems to possess an infinitely varied content, which is quite alien to this form.
>
> During the following analysis it is important to keep in mind that we are only concerned with those forms of money which arise directly from the exchange of commodities, but not with forms of money, such as credit money, which belong to a higher stage of production. For the sake of simplicity gold is assumed throughout to be the money commodity.
>
> Marx 1970: 64

For Marx, the central question of monetary theory was the development of the commodity fetish into the money fetish. He wanted to explain how it is that, under capitalism, the individual can carry around "his social power, as well as his bond with society, in his pocket" (Marx 1973: 157) in the form of money. The crux of his critique of political economy (namely: analysis of the capitalist mode of production as a fetishistic form of association that produces its own, genuinely capitalistic form of wealth) has been only a marginal factor in the debate among Marxists. That applies all the more to non-Marxists's perception of Marx. But this perception of Marx's monetary theory has fatal consequences. The fact that Marx, for the sake of simplicity, began his analysis with gold as the king's commodity has been used to lump his concept of money together with classical metallism and, for

[4] In *Capital*, he writes the following: "Everyone knows, if nothing else, that commodities have a value-form . . . I refer to the money-form. Now, however, we have to perform a task . . . That is, we have to show the origin of this money-form, we have to trace the development of the expression of value contained in the value-relation of commodities from its simplest, almost imperceptible outline to the dazzling money-form. When this has been done, the mystery of money will immediately disappear" (Marx 1990, 139).

the sake of convenience, to ignore the specific content of his monetary theory. A classic text on the history of economic theory thus maintains that, "The thinking behind metallism has been defended by representatives of a wide range of theoretical tendencies. For instance, Marx, under the influence of classical theory, develops a strongly metallist monetary theory in *Capital* in which he decisively rejects the view that money is merely a sign while also seeking evidence that money, as a commodity, derives its value exclusively from the working hours required for its production" (Stavenhagen 1969: 432). Marx's theory is thus seen through the lens of the nominalism vs. metallism debate that dominated the discussion of monetary theory in the nineteenth century.[5]

In reality, however, critique of political economy and classical economics are worlds apart with respect to the definition of the money commodity. Classical economic theory legitimately earned the label "metallism" because it was in fact committed to gold and silver or any other commodity traded on the commodities market as the allegedly ineluctable foundation of the money system. By contrast, Marx's concept of money as a commodity that stands apart also leaves room for a money commodity that is recruited from another part of the world of commodities. But the derivation of the need for a money commodity in no way implies that the list of potential candidates is limited to commodities sold on goods markets. Even if Marx never examined this complicating issue, the internal logic of his argument implies that the money commodity can just as well emanate from commodities traded on capital markets.[6]

This crucial difference between the classical and Marxian theories arises directly from their respective conceptions of the content of capitalist wealth. As outlined above, Adam Smith, the father of classical economics, regarded use values destined for consumption as actual commodity wealth and treated commodities' exchange value as subordinate.

But to interpret the commodity this way while simultaneously asserting that only commodities can constitute the material expression of money is

[5] Even an author like Schumpeter believes this—and he is one of the few notable bourgeois economists who has rigorously and, in general, quite sympathetically engaged with Marx. Like others in his discipline, he takes the fact that Marx did not present a monetary theory that was separate from the rest of his theoretical work as evidence that Marx did not produce any noteworthy monetary theory of his own. Schumpeter therefore wrote of "Marx's distinctly weak performance in the field of money, in which he did not succeed in coming up to the Ricardian standard" (Schumpeter 1976: 22).

[6] "Capital-market commodities" are understood here to mean titles of ownership such as stocks and bonds. They come into being when monetary capital is sold as a commodity. Unlike goods markets, they represent claims to future value (see Lohoff 2014 and Lohoff and Trenkle 2012). This specific type of commodity will be addressed in greater detail below.

necessarily to constrict the range of possible candidates for the position of money commodity to those commodities that are endowed with a material use value, i.e. to commodities sold on goods markets. Marx, on the other hand, understands exchange value as the only thing that is socially relevant about particular commodities under capitalism. For him, money simply represents the embodiment of exchange value:

> It is the foundation of capitalist production that money confronts commodities as an autonomous form of value, or that exchange-value must obtain an autonomous form in money, and this is possible only if one particular commodity becomes the material in whose value all other commodities are measured, this thereby becoming the universal commodity, the commodity *par excellence*, in contrast to all other commodities.
>
> Marx 1991: 648

This line of reasoning is not only diametrically opposed to that of classical economics insofar as it conceives of money, expatriated from the realm of capitalist wealth, as the "absolute commodity." Additionally, if exchange value is the essential element of the commodity, then the range of candidates for the position of "king's commodity" logically expands to include those commodities that represent exchange value without being therefore endowed with material use value.

4. From Commodity Fetish to Money Fetish to Capital Fetish

Bourgeois economics seeks to perceive a decidedly rational economic system in the capitalist mode of production. The critique of political economy decodes this alleged paragon of common sense wealth generation and reveals it as a crazed, multi-layered fetish system. The commodity is a fetish because human social relations slip into the products of their labor and, consequently, confront people in this material form as an external force. Or, in Marx's own words:

> The mysterious character of the commodity-form consists … in the fact that the commodity reflects the social characteristics of men's own labor as objective characteristics of the products of that labor themselves, as the socio-natural properties of these things. Hence it also reflects the social relation of the producers to the sum total of labor as a social relation between objects, a relation that exists apart from and outside the producers.
>
> Marx 1990: 164–165

This underlying fetishistic logic—the externalization of a relationship to an autonomous thing—recurs within commodities themselves. Commodities' exchange value dimension takes on a life of its own and becomes a special object that exists distinct from particular commodities—the stand-alone, universal commodity. This is the core of the money fetish:

> The definition of a product as exchange value thus necessarily implies that exchange value obtains a separate existence, in isolation from the product. The exchange value which is separated from commodities and exists alongside them as itself a commodity, this is—*money*. In the form of *money* all properties of the commodity as exchange value appear as an object distinct from it, as a form of social existence separated from the natural existence of the commodity.
>
> Marx 1973: 145

But this is by no means the last in a series of fetishistic steps. The transformation of a social relationship into a thing that appears exist autonomously is perceptible on another level as well, namely that of the relationship of capital. In Marx's analysis, capital is, in the first place, a social process comprised of three metamorphoses[7] in which value is "transformed into an automatic subject" (Marx 1990: 255) of the valorization of value through the exploitation of the particular use value of the labor commodity. In turn, this process also produces its own fetish form: the capital fetish.

Because money is the "absolute mode of existence of exchange value," it occupies a privileged position in the circulation of capital. While particular commodities can only ever be way stations in the process of the valorization of value, money constitutes its starting and end points. The process of expanding value turns out to be the self-justifying motion in the transformation of money into more money. This is not without repercussions for money itself. Its special place in the world of commodities as the starting point for capital circulation means that, "money receives, besides the use-value which it possesses as money, an additional use-value, namely the ability to function as capital. Its use-value here consists precisely in the profit that it

[7] The first metamorphosis consists of the purchase of labor and the means of production. Particular commodities substitute for the universal commodity. A new commodity emerges in the production process in which not only the value of the exploited means of production and labor reappears. Because genuinely social and thus transcendental use value is immanent to labor, value can be generated beyond its own reproduction costs and that new value represents more value than the monetary sum that was originally applied. In a third metamorphosis, the value and surplus value of the new commodity once again take the form of money: M begets M'.

produces when transformed into capital. In this capacity of potential capital, as a means to the production of profit, it becomes a commodity, but a commodity of a special kind" (Marx 1991: 459–460).

While money, in its capacity as potential capital, in turn becomes a potential commodity, not only does the monetary exchange value of commodities take on a form that is itself separate from those commodities but the capital relationship, as money, is also expressed in a form that is external to the actual valorization of value and detached from functioning capital and its circulation. Consequently, another fetish form appears alongside the money fetish, namely the capital fetish.

There are various forms in which money, in its capacity as potential capital, can become a commodity and the relations of capital can be externalized in money. Marx investigated one variant of the "superficial form of the capital relation" (Marx 1991: 515) above all, namely interest-bearing capital. In doing so, he looked at what the capital fetish looks like for the potential lender of money capital:

> [I]t is up to the possessor of money, i.e. of the commodities in their ever-exchangeable form, whether he wants to spend this money as money or hire it out as capital. In interest-bearing capital, therefore, this automatic fetish is elaborated into its pure form, self-valorizing value, money breeding money, and in this form it no longer bears any marks of its origin. The social relation is consummated in the relationship of a thing, money, to itself. Instead of the actual transformation of money into capital, we have here only the form of this devoid of content. As in the case of labor-power, here the use-value of money is that of creating value, a greater value than is contained in itself. Money as such is potentially self-valorizing value and it is as such that it is lent, this being the form of sale for this particular commodity. Thus it becomes as completely the property of money to create value, to yield interest, as it is the property of a pear tree to bear pears. And it is as this interest-bearing thing that the money-lender sells his money.
>
> Marx 1991: 516

5. Second Order Commodities

The preceding quotation is very popular in debates among Marxists. Yet both this passage and the problem of the capital fetish are commonly understood purely in terms of a critique of ideology. The notion that the monetary sphere can breed (capitalist) wealth without feeding back on actual labor exploitation, as the popular interpretation would have it, is simply an optical illusion. That

much is true. However much water one gives it, a twenty-dollar bill planted in a flowerpot will not grow abstract wealth. Capital is not a physical thing but rather a social relation that takes on the appearance of a thing.

Correspondingly, its reproduction is also the product of social relations. However, apart from capital formation through the exploitation of the labor commodity's capacity to produce (surplus) value, which is a familiar topic in Marxist discussions, there is also a second variant that is omitted from those conversations: the relation that is mediated by the sale of the money-capital commodity can also produce abstract wealth. Capital formation decoupled from actual valorization of value is no mere subjective delusion. Like the commodity and money fetishes, the capital fetish is a *real fetish*.

In order to comprehend the mechanism of capital formation beyond the valorization of value, we must look above all at a particular feature of the money-capital commodity: the dual exploitation of its use value by both buyer and seller. A thing like that would be inconceivable for the goods-market commodities that Marx analyzed in the first volume of *Capital*: if a person sells an apple, that person can no longer eat it thereafter. As far as this segment of the commodity universe is concerned, sale inevitably means the complete and final transfer of a commodity's use value to the buyer. When a sum of money is sold as money capital, obviously the buyer also obtains the use value of that money. With that sum of money on hand, the buyer can then use it, for example, as a medium of exchange. But that does not mean that the seller can no longer exploit the use value of that sum of money. On the contrary, by giving that money away on condition that it will be augmented and then returned, the seller exploits its use value as potential capital. But the transfer of the original sum does not enable the simultaneous exploitation of its use value by two different economic actors. Through the transfer of the original sum as a loan or other form of money capital,[8] its exchange value is duplicated during the time that money is separated from the seller. Even though the original sum has been passed to the money-capital buyer, the seller is by no means left empty handed. The seller has a monetary claim against the buyer and that is the seller's capital. In order to distinguish it from the capital that is involved in actual value production, Marx called such independently existing mirror images of the original monetary sum "fictitious capital."

In turn, the economic significance of this "fictitious capital" depends on the social form that it takes. As long as the mirror image of the original capital is a non-transferable, personal claim to repayment and interest, as in the case of credit between private individuals, it will constitute capital for its owner. But it

[8] Apart from loans of money capital, share acquisition is traditionally among the most important forms of money-capital transfer.

will not enter into economic circulation and, in this respect, the duplication of the initial sum into the original and its mirror image will make no significant difference overall. That changes, however, with the circulation of the initial capital's mirror image: the payment bond. This can happen indirectly, as for example when money capital is loaned to a bank and thus becomes the starting point for lending by that bank. In that case, additional social capital is formed. It can also occur directly, namely when the monetary claim itself takes the form of a tradable commodity and circulates, such as in the form of shares or securitized debt as in the case of corporate or government bonds. These commodities that are traded on capital markets represent capitalist wealth just as much as the commodities produced by functioning capital. Their genesis, however, is fundamentally different from that of the particular commodities traded on goods markets. That is why I have called commodities traded on finance markets "second order commodities," in order to distinguish them from commodities sold in goods markets, which I have therefore called "first order commodities" (Lohoff and Trenkle 2012: 124–138). While first order commodities represent past labor (i.e. value that has already been generated), second order commodities embody pre-capitalized *future* value.

The notion that money can breed money even without taking a detour through the exploitation of living labor is therefore not simply a misperception on the part of the money capitalists who partake of the profits of others.[9] The successful sale of shares and debt instruments as well as credit linkage actually represent a distinct form of capital formation based on the anticipation of value. Credit linkage and the occurrence of second order commodities thus also make the capital fetish a real fetish.[10]

6. The Inner Categorial Segmentation of the Money System

Putting the capital fetish aside, we return now to the money fetish and the logical status of the Marxian concept of money. Whereas the critique of political economy describes money as the stand-alone universal commodity, it should be noted that this designation refers to the money system as a whole.

[9] As is argued in Marxist discussions, according to which the M–M' movement is a mere appearance that obscures the exploitation of labor and the production of surplus value. As such, the actual fetishistic dimension of the capital fetish remains hidden.

[10] The fact that this independently existing mirror image of the initial capital disappears again with the implementation of titles of ownership does not change this in the least. As long as fictitious capital exists alongside that initial capital, it is just as real and economically effective as the initial capital.

Just as the king's position as master of the judicial system in an absolutist regime in no way compelled him to personally pass judgment on any accused person, the universal commodity need not physically appear in everyday payment transactions and directly confront goods-market commodities. Just as the monarch had his representatives to adjudicate in his name, so the money commodity can withdraw from everyday business and delegate that responsibility in whole or in part.[11] Not everything that assumes the function of money in daily life is thus itself a money commodity. However—and this is critical—every developed, functioning money system is based on a money commodity. Accordingly, the thing that we conventionally call "money" is not at all the same thing as the money commodity in the meaning of Marx's theory. In Marx's time, money (in the conventional sense) was primarily composed of derivative monetary forms that did not embody abstract wealth on their own terms but rather only attain that capacity by way of their relationship to the king's commodity.

From the perspective of the critique of political economy, we can distinguish between two basic types of these logically subordinated monetary forms. On one hand, there are *money tokens*, such as paper money or coins, issued by the guardian of the universal commodity: the central bank. Their capacity to represent abstract wealth is governed by the money commodity owned by the central bank. On the other hand, there are *private money surrogates*, or payment bonds issued by private actors and denominated in the legal tender that, in turn, become substitutes for legal tender. In his writings, Marx addressed this second, derivative monetary form primarily by using the example of the bill of exchange, the most important type of credit money during his lifetime. In categorical terms, the bill of exchange, like the subsequently developed credit money variants, is a second order commodity and represents anticipated value. As a transferrable and interest-bearing payment bond, it and its ilk belong to the world of commodities, however, like all types of tradable private payment bonds, it is classified as a *particular* commodity—which distinguishes it from the money commodity.

The bill of exchange brought this surrogate character into sharp relief, given that it represented the issuer's obligation to exchange the promissory

[11] In Marx's own lifetime, the money commodity had already paved the way for the use of money tokens and private credit money in day-to-day money transactions. With respect to domestic payment transactions, Marx assumed in principle that the money commodity was completely substitutable. It was only in international payment transactions that he regarded the money commodity (gold, at the time) as irreplaceable in the event of disparities in the balance of payments: "Symbolical money or credit money … can function as means of purchase and means of payment in place of the precious metals in domestic circulation, but not on the world market" (Marx 1970: 166–167).

note for "proper money" at a fixed date. In the case of modern credit money, through which commercial banks payment obligations mediate payment transactions between accountholders, permanent offsetting processes make this subordinated status a bit more obscure. But the heart of the matter—the substitution of payment bonds issued by commercial actors for legal tender—has not changed at all. Anyone who goes to a supermarket checkout and reaches for a debit card to pay from a checking account rather than with cash assigns that supermarket a monetary claim against a bank. That process logically presupposes the existence of legal tender.[12]

In Marx's time, alongside the physical money commodity in the form of gold coins, private economic actors primarily used banknotes and small change as a means of payment. These tokens of the money commodity, which serve as legal tender to this day, are neither the universal commodity nor a particular commodity but rather purely money symbols. Regarded in isolation, they embody neither value that has already been produced nor anticipated value. Instead, they refer to the money commodity. They are backed by the capitalist wealth accumulated by the authority that issues money tokens. It is not their vanishingly small intrinsic value nor their ominous scarcity but rather the central banks accumulated stocks of the money commodity that confer social significance upon these money symbols and turn them into proxies for value.

7. The Change in the Money Commodity

Every developed capitalist money system adheres to the structure outlined above and is comprised of the three basic elements described here: the actual money commodity, which is primarily or exclusively found in the vaults and balance sheets of a central bank; the money tokens issued by the central bank; and private credit money. A currency system that strays from this fundamental structure and renounces a money commodity cannot function. Money tokens that are not backed by any money commodity would inevitably revert back to the material makeup of banknotes and coins: pieces of printed paper and small metallic discs.

Nonetheless, the money system that was built on this three-part structure has undergone profound upheavals. Above all, its basis, the money commodity, has changed over the course of capitalist development. Whereas gold and

[12] The subordinate status of private credit money is reflected by the fact that, while every economic actor must accept legal tender for the settlement of accounts, the same does not apply to private credit money.

silver shared the role of money commodity during Marx's lifetime (bimetallism), gold alone became dominant in every major capitalist country in the late nineteenth century. Under the classical gold-standard system, money tokens' dependence on the money commodity and its value was clearly demonstrated by the fact that their relationship was established by law. On one hand, most central banks were obligated to maintain a gold reserve in an established proportion relative to the money tokens they issued.[13] On the other hand, every banknote holder had the right to exchange his or her money tokens for physical precious metal from the relevant central bank at a fixed rate. That made currencies like the British pound, the German reichsmark, or the US dollar into direct regional representatives of a particular weight unit of the money commodity.

The fact that it was specifically gold that ascended to the throne of the universal commodity is no accident of history. If the money commodity was going to come from the ranks of first order commodities endowed with material use value, it was always going to be gold. Its physical attributes and its high value per unit of weight make it the ideal embodiment of actually expended, abstractly universal labor. Nonetheless, gold-backed money was not the last word in capitalist development for all time. The way that productive powers developed in the first half of the twentieth century led to a dramatic increase in the advance costs of producing surplus value, making it increasingly difficult (to the point of impossibility) to defray those expenses solely with previously accumulated abstract wealth. Continuing the capitalist accumulation process came to depend on the anticipation of future value production. But that can only happen on a large scale if the money commodity is included in this anticipation process. It can no longer represent past "dead labor," but rather pre-capitalized future value production.

The money commodity changed as a result of a protracted historical process over the course of more than six decades that can only be referenced in passing here. It began in 1914 when countries like Britain and Germany needed to suspend their central banks gold-convertibility obligation in light of the horrendous wartime expenses that arose with the outbreak of the First World War. After the monetary chaos of the interwar period, the Bretton Woods system led to a kind of dual reign of both old and new money commodities. While the United States, the economic superpower of the immediate postwar period, maintained the dollar's link with gold for

[13] For example, the Bank of England was obligated to back two thirds of the circulating banknotes with gold. For the remaining third, it was permitted to keep prime commercial bills, which was linked to interest received.

purposes of its international dealings,[14] the central banks of the other core capitalist states primarily used fictitious capital denominated in dollars as a money commodity.

Insofar as the United States's economic advantage dissipated and the evolution of productive power made further increases in the anticipation of future value imperative for production, this hybrid system could no longer be maintained. With the abolition of gold convertibility for the US dollar in 1971, gold's tenure as a money commodity finally came to an end and the monetary claims accumulated by central banks in the course of their "credit money creation" became the sole money commodity.

8. The New Money Commodity and Its Idiosyncrasies

The new money system that arose after gold was demonetized has a significantly more complicated structure than the gold-standard system that Marx had in mind. In order to tease out the secrets of money as it existed in his time, it was essentially sufficient to expose the money fetish and stop there. By contrast, today's money system is the product of the *intersection of two fetish forms*: the money fetish and the capital fetish. The mysterious ability (outlined in the section about second order commodities) to transform future value production into capital beforehand through the sale of money capital and the dual application of its use value was only a marginal factor in the capitalist accumulation process during Marx's time and remained an epiphenomenon that was limited to private capital markets. At the present stage of capitalist development, value anticipation is embedded in the entire money system—even (or especially) the money commodity embodies future value. The money in today's central banks is *backed by nothing other* than the fictitious capital the central banks accumulate in the course of "money creation."[15]

[14] Domestically, gold convertibility had not been in effect since 1933. That was the year the Roosevelt administration prohibited private gold ownership for US citizens as part of the New Deal. That ban lasted until 1971: it no longer served any purpose once the link between the dollar and gold was severed.

[15] I use the phrase "money creation" here only because it is an established term. As should already be clear from the text above, it obscures the actual context. On one hand, commercial banks do not receive simple money ["einfaches Geld"] from central banks at all. What they get instead is money that has been transformed into monetary *capital* from the outset, given that the money is lent at a corresponding interest rate. On the other hand, the term "creation" suggests that fiat money is the outcome of a one-sided determination on the part of the central banks. In reality, book money always comes about through an interactive relationship. A central bank can only "create" money insofar as it enters into a credit relationship with commercial banks and commercial banks can only do so insofar as they find suitable debtors.

This clarifies the significance of the change in the money commodity in terms of exchange value: as a first order commodity, the classical money commodity, gold, represented past abstract labor. By contrast, its successor as a money commodity came from the ranks of second order commodities and is therefore a representative form of future value production that has been transformed into capital in advance. As such, it stands for the anticipation of abstractly universal labor that is yet to be performed. But this change in the nature of the money commodity's exchange value is, of course, accompanied by far-reaching changes in terms of use value as well. Given that a systematic analysis would go beyond the bounds of the present study, a brief enumeration will have to suffice here.

The logic behind the process of segregating the universal commodity from the hordes of particular commodities depends on whether the universal commodity is drawn from among the first or second order horde. Where precious metals are concerned, the conditions are already familiar to us. First order commodities have extremely diverse material use values. As Marx demonstrated, the use value of one of these many particular commodities becomes the materialization of its opposite: quite simply, the embodiment of exchange value. Singling out the money commodity from among second order commodities must therefore follow a different model because all commodities from this sphere are endowed with the same transcendental use value: that of representing self-valorizing value. Here, the dividing line between commodity riffraff and the queen of commodities does not pass between different commodities. Instead, whether it remains a particular commodity of its class or is elevated to the universal commodity depends on *who possesses* a second order commodity. If a commercial bank grants credit to another bank, the debtor's payment bonds constitute private fictitious capital. By contrast, if a central bank grants credit to a commercial bank, that commercial bank's repayment bonds thereby become elements of the universal commodity. A US government bond owned by a private investor, such as a commercial bank, is a particular commodity. On the other hand, if the European Central Bank should accept the same bond as collateral for central bank credit, its status changes. Depositing that bond with the abstract universality of the monetary—the entity that issues legal tender—elevates it to commodity royalty. Of course, that US bond loses its status again when the credit expires or it is transferred back to a commercial bank.

This makes one fundamental difference between the classical money commodity and its successor perfectly clear. As previously mentioned, gold was in retreat even in Marx's time, at least for purposes of everyday payment transactions. And yet money systems in which a goods-market commodity functions as the money commodity are still characterized by the basic fact

that it is always possible for not only central banks but also private actors to own the money commodity. Anyone who owned gold or gold coins not only commanded mere money tokens but also had direct access to the money commodity. By contrast, in today's money system, the money commodity, by definition, can never find its way into the hands of private actors. As the new fictitious capital that arises from central banks bestowal of credit to commercial banks, the new money commodity only exists on the "assets" side of a central bank's balance sheet. This gives new meaning to Marx's concept of the universal commodity as the segregated commodity.

The fact that central banks have firmly localized the money commodity as a monetary abstract universality obviously means that the act of directly converting legal tender into *the new money commodity*, which was characteristic of the classical gold standard, is impossible. However, that does not mean that the contemporary monetary regime has emancipated the "value" of the circulating money tokens from the abstract wealth accumulated by central banks. As ever, their validity is derived from the money commodity, if indirectly.

Unlike the classical money commodity, a money commodity that owes its special status to its owner *is necessarily synthetic in nature*. Composed of central banks monetary claims as a kind of composite commodity, it is subject to a process of permanent recombination. Central bank credits are continuously expiring and being re-granted; second order commodities are continuously traded between commercial banks and central banks. The full breadth of the synthetic money commodity is also subject to monumental fluctuations—the monetary policy the relevant central bank is not the least significant factor. And it is on precisely this point that the contrast with the old money commodity breaks down most dramatically. Under the gold standard, the money system was generally built on an immutable foundation. If, for the sake of simplicity, we disregard the non-monetary applications of the precious metal, then the dimensions of the money commodity were identical to the full breadth of the precious metal that had been pried out of the Earth. The expansion of the system of abstract wealth created more demand for additional money commodity, which, within the framework of the gold standard, could thus only be met one way: by mining more gold.

The change in the money commodity provided a great deal more leeway for the self-justifying system of expanding abstract wealth. Under the gold standard, a portion of the wealth produced was withdrawn from the accumulation process and decommissioned just so that money could fulfill its duty as the absolute commodity. The transition to the new money commodity not only meant the end of these *faux frais* (overhead) in the overall business of capitalism. As an integral component of the value-anticipation system, the generation of the money commodity can even make

its own contribution to capital accumulation. But there is a price to be paid for this tremendous advantage. First and foremost, the change in the money commodity means that it is only effective in a smaller field. Gold was not only the universal commodity within particular currency areas, but in bar form it simultaneously functioned directly as a global currency. By contrast, its successor's domain is limited to any given particular currency zone. That inevitably has an effect on the exchange relations between various regional money tokens as well.

While the gold standard automatically resulted in fixed exchange rates between the legal tender of various countries due to the fact that it linked all currencies to the precious metal, the ultimate renunciation of gold meant transitioning to unstable exchange rates.

But the change in the money commodity had yet another shortcoming. Unless someone should achieve the alchemical dream of turning worthless materials into gold, the old money commodity will continue to retain its capacity to embody abstract wealth without any deterioration until the day capitalism ceases to exist. The same cannot be said of the new money commodity. As with privately held fictitious capital, the fictitious capital owned by the central banks does not guarantee full realization of anticipated value. The money issued by central banks consistently loses a portion of its backing—with corresponding long-term consequences for its "monetary value." Inflation trends are very good indicators of the loss of structural validity. While an economic cycle under the gold standard used to include fluctuations in the exchange relationship between any given particular commodity, on one hand, and the universal commodity and its paper surrogate, on the other, ultimately there was no trend toward monetary devaluation across business cycles. This changed fundamentally with the end of gold's singular hegemony. It is no coincidence that the term "secular inflation" has taken root among economic historians.

The purchasing power of money tokens has disintegrated in parallel with the capitalist accumulation process since at least the end of the Second World War. Sometimes that erosion process is stronger, sometimes weaker, but it has long been an integral component of the normal function of capitalism. That applies to such an extent that economists hear alarm bells whenever the inflation rate drops below the two-percent mark because it is considered a sign of crisis.

In a society that has dissipated into isolated private producers, competition will naturally produce winners and losers. There is never a moment when all capital successfully executes the self-justifying motion of the valorization of value. In every period, one commodity or another—or one form of individual

capital or another—is subject to devaluation and falls by the wayside. If devaluation of commodities or capital should become a mass phenomenon and valorization should shift from norm to exception, the matter would certainly be alarming, from a capitalist perspective, as it would mean that the system of abstract wealth is in crisis. The change in the money commodity also has far reaching consequences for the course and the composition of such crises. While gold was positioned as the money commodity, the devaluation process during times of crisis was focused on particular commodities. Private functioning and fictitious capital might have been devalued, but never the universal commodity: with the change in the money commodity, its very creation becomes a moment in the process of capitalist accumulation, which also means that, during major crises, the devaluation process can, in principle, also encroach on the monetary medium as a whole—a development that was absolutely impossible when gold was the money commodity.

Marx explained how devaluation crises progress under the gold standard. On the one hand, during crises, the particular commodities that constitute functioning capital are devalued. That applies primarily to products that are no longer marketable or will only sell below their value and secondarily to the machines and raw materials to be used in production. On the other hand, the replacement of the money commodity with private monetary surrogates becomes the problem:

> In times of pressure, when credit contracts or dries up altogether, money suddenly confronts commodities absolutely as the only means of payment and the true existence of value. Hence the general devaluation of commodities and the difficulty or even impossibility of transforming them into money, i.e. into their own purely fantastic form. Secondly, however, credit money is itself only money in so far as it absolutely represents real money into the sum of its nominal value. With a drain of gold, its convertibility into money becomes problematic, i.e. its identity with actual gold.
>
> Marx 1991: 648

When Marx speaks of a monetary crisis, it is only ever in this narrow sense of an acute lack of socially valid capacity to pay (solvency). To the extent that private actors' payment bonds can no longer sufficiently substitute for the money commodity, the monetary base contracts, thus allowing commodity prices to fall through the floor and paralyzing the production of goods. Accordingly, Marx summarizes what is at the core of the crisis mechanism as follows:

> A devaluation of credit money (not to speak of a complete loss of its monetary character, which is in any case purely imaginary) would destroy all the existing relationships. The value of commodities is thus sacrificed in order to ensure the fantastic and autonomous existence of this value in money. In any event, a money value is only guaranteed as long as money itself is guaranteed. This is why many millions' worth of commodities have to be sacrificed for a few millions in money. This is unavoidable in capitalist production, and forms one of its particular charms.
>
> Marx 1991: 532

But the apodictic statement that sacrificing particular commodities on the altar of the universal commodity during a crisis is one of the unavoidable "charms" of "capitalist production" must be put into perspective. This mechanism only makes undisturbed headway during crises when the monetary order is based on the gold standard. The change in the money commodity gives central banks the tools to effectively defend the "convertibility" of private credit money. When central banks reduce interest rates and increase their own "money creation," they can prevent impending credit squeezes and thereby take action against the devaluation of particular commodities. However—and this is the downside—"actual money" (Marx) also loses its position as the radiant Sol Invictus over the countries in crisis. A loose monetary policy and increased "creation" of the money issued by central banks can temporarily cover up a fundamental crisis in the system of abstract wealth reproduction, but they cannot undo it. These measures only postpone the need for devaluation, specifically by shifting it to the monetary medium as such.

The last global crisis that followed the model of a pure deflation crisis as Marx described it was the global economic crisis of the 1930s. The economic ruptures in the years immediately after gold was finally demonetized followed a new set of rules.

Economic historians remember the 1970s as a period of "stagflation"—of weak growth and relatively high inflation at the same time. With the progression of the fundamental crisis that the capitalist mode of production has found itself in over the intervening decades, it is foreseeable that this model will have to reproduce itself at a much higher level. In 2008, when the worst devaluation spiral in the history of private fictitious capital was looming and threatened to take the entire global economy down with it, the central banks stepped in and brought the system of pre-capitalization of future value production back onto a growth trajectory with a policy of super-cheap money. But the guardians of currency were only able to do that by

accumulating more and more fictitious capital that basically needed to be devalued—which is to say by insidiously diminishing the quality of the composite money commodity. If the central banks assets should also turn out to be financial junk and undergo a manifest devaluation process in the wake of subsequent crisis episodes, it will necessarily affect the derivative purchasing power of money symbols. The 2008 crisis episode and its overcoming were only the prelude to new episodes in which the devaluation of particular first and second order commodities will be intertwined with the devaluation of the universal commodity. The logical starting point for the crisis process in the twenty-first century is a global society that is broken up into discrete private producers and that destroys the thing it cannot do without: functional money.

9. Functionally Defining Money and Making the Money Commodity Invisible

The path that the central banks have taken since 2008 is even starting to make many economists nervous about inflation, but the theoretical precepts of conventional economics do not allow its adherents to locate the fundamental problem where it actually is. And there is a simple reason for that: it is difficult to analyze the looming devaluation of the money commodity without establishing the existence of a money commodity in the first place. But economists take it completely for granted that there has not been a money commodity for a long time. Where do they get that incorrect notion and why are they immune to all doubt?

The main reason is certainly the basic error of economics described above. Like the classical economists, their present-day successors are also mystified by the content of capitalist wealth. They have no concept of abstract wealth and they confuse commodity wealth with wealth in material use value. Anybody who, following in Adam Smith's footsteps, can only perceive commodity wealth where material use value appears as a bearer of exchange value will be logically incapable of seeing a money commodity that originates among second order commodities. The various titles of ownership that central banks accumulate in the course of their money-creation process simply have no material use value, unlike the classical money commodity: gold. Instead, they only have the transcendental use value of representing future value production. Because the prevailing thinking assumes that its own blind spots are ineluctable truths, the change in the money commodity looks like its disappearance.

But the absence of a term for abstract wealth, on one hand, and the equation of commodity wealth with wealth in material use values, on the other, are not the only reasons why the prevailing line of reasoning mistakes the process of demonetizing gold (which reached its conclusion in 1971) with the de-commodification of money. The functionalist understanding of money keeps conventional economics blind to the new money commodity; economists cut off debate concerning the nature of money decades ago with no resolution. Since then, economic ideology has been satisfied with construing money in terms of its everyday function for individual economic subjects. British economist John Hicks gave this concept of money its classical definition: "Money is defined by its functions: anything is money which is used as money: *money is what money does*" (1967: 1; emphasis mine).

At first glance, this quintessence of a functionalist concept of money appears to be a content-free tautology that says nothing. But if we look at this statement from the perspective of our analysis, it includes two far-reaching monetary-theory positions. Claiming that *everything* that functions as money is money erases the necessary conceptual distinction between banknotes and privately issued credit money, which is to say private fictitious capital. But not only that. If we define money *exclusively* as that which directly functions as money, i.e. serves as means of payment in private economic subjects everyday business transactions, the contemporary money commodity completely disappears from the concept of money. As described in the previous section, that money commodity only exists in the central banks balance sheets. One of its idiosyncrasies is that, unlike the traditional money commodity, namely gold, it can never physically confront private economic actors. Consequently, the generally recognized functionalist view of money produces an image of today's money system that inverts the real hierarchy that exists between the actual money commodity and the derivative form of money: only the derivative form is actually presented as money while, by contrast, the basis of the money system is theoretically eliminated.

Although the prevailing concept of money erases the categorial difference between money tokens, on one hand, and private fictitious capital that serves as means of payment, on the other, it still sneaks back into economic doctrine through the back door of the various (abstractly and purely experiential) definitions of the money supply.

Conventional economics applies "narrower" and "broader" definitions of the money supply, which are differentiated by their account of which "liquid" assets count as money and which do not. Apart from cash, money supply S1 only comprises sight deposits from non-banks, such as checking accounts. S2

includes savings accounts with legal terms of notice for cancellation and deposits with maturity terms of up to two years. Money supply S3 additionally comprises, among other things, money market funds, money market securities and bank bonds with terms of up to two years. Put simply, the "broader" the definition of a money supply, the more forms of fictitious private capital are added to the concept of money.

The prevailing economic doctrine is good at theoretically expunging the money commodity. Alongside conventional money supplies S1 to S3, it also acknowledges the monetary base S0. But it does not in any way conceal the money commodity. Instead, it defines the money system's primordial reference point as follows: "The monetary base comprises the current reserves of money in the central bank, which forms the basis for money creation by credit institutions. The monetary base is the sum of the currency in circulation (including the credit institutions' cash balances) plus the credit institutions' sight deposits at the central bank (central bank balances)."[16]

If we look at the real connection, we can see two processes that are inseparably linked to one another in the creation of "central bank money": (a) the central bank grants credits to the commercial banks, which it partly pays out in the form of cash (i.e., money tokens) and partly enters as credits to the private banks accounts with the central bank, allowing them access to it at any time; (b) in contrast to this transfer of money capital, the central banks accumulate monetary claims against the commercial banks, i.e. claims to repayment and interest on the credit concerned within a defined period of time. Only the first aspect is reflected in the definitions of the money supply. In order to adhere to S0, the "monetary base" therefore comprises the cash brought into circulation via the granting of credit to the commercial banks and the sight deposits that represent the part of the money capital transferred by the central banks to the commercial banks that currently have not found their way into the system of private credit-linkage formation. The attendant counter-motion, the accumulation of second order commodities by the central bank, i.e. the sum of claims against the private banks that are entered into the central bank's balance sheets, is cast aside in the definition of the money supply.

Economists know quite well, of course, that every balance sheet has two sides and that central banks do not only need to enter debts owed to commercial banks but also claims against them. Thanks to the functionalist definition of money, however, these assets are irrelevant in monetary theory. Incidentally, this consistent excision of the money commodity is also reflected

[16] www.wirtschaftslexikon.co/d/geldbasis/geldbasis.htm (accessed September 29, 2018).

in the remarkable coinage "money creation." Today, central banks put so-called central bank money into circulation all but exclusively through loans to commercial banks. Even cash is circulated this way. It goes without saying that there are always two sides in a credit relationship: the lender and the borrower. Nonetheless, the term "money creation" suggests a one-sided act with the central bank as the creator god. The functionalist definition of money only acknowledges that money capital which commercial banks receive from central banks and not the other side of that coin (namely central banks accumulation of monetary claims), which is reflected in this misleading conceptualization.

Because conventional economics both mixes up capitalist wealth with wealth in goods and assumes that its functionalist concept of money is always authoritative, it presents the process of "dematerializing" money as conclusive evidence of the correctness of the nominalist concept of money. But it immunizes against ideas of a money commodity by blocking access to a workable analysis of the modern money system before it can even get started.

10. Crisis in the Ideology of Money as a Simple Medium for the Movement of Commodities

Since the days of Adam Smith, economists have been selling the capitalist mode of production as a particularly rational way of distributing consumer goods and money as a simple medium for the movement of commodities. This misleading perspective primarily owes its pseudo-plausibility to two conditions that characterize the circulation of functioning capital. One is that increases in the value of functioning capital are extrinsic to circulation. If one looks only at individual exchange acts and abstracts from the overall capitalist process, it does seem more natural to interpret the dual motion of buying and selling as a mediated exchange of commodities instead of the aimlessly self-justifying motion from money to more money. This is all the more true when we consider that there is a broad swath of market participants for whom money really is only a medium for moving commodities. People who sell their labor do so only to then be able to buy the commodities they need to meet their life necessities with the money they earn. But successfully selling the labor commodity has a social precondition: labor sellers can only acquire money when they can find a buyer for whom the application of their labor fits into a process of transforming money into more money. The conventional concept of money does not take this detail into account. By conceiving

money as a simple means for moving commodities, it explains the content of capitalist economic activity as a C–M–C motion and obscures the fact that it consists of a self-justifying C–M–C' motion. Money absolutely does function as a universal means of circulation, but only insofar as it is integrated into the circulation of capital valorization.

The obscuring conditions outlined here explain why the underlying incorrect assumptions in economic theory have been so tenacious and have been served up again and again since Adam Smith's time. But the capitalist system has undergone a change (particularly in recent decades) that undermines the plausibility of the prevailing concept of money from a completely different angle. It is generally understood that the primary feature of capitalist development over the past few decades has been a historically unparalleled, explosive ballooning of the financial superstructure. The accumulation of functioning capital has become an afterthought in the accumulation of fictitious capital. Against this historical background, the received notion of money has empirically become an anachronism. What else are we to think of a concept of money that stubbornly defines it on the basis of its function with respect to goods market commodities when the bulk of money resides in financial markets and money mediates the movement of stocks, bonds and derivatives? But that's not all. The paradigm of capitalism as a rational mode of production has also come under increasing pressure, particularly in recent years. Neither the continually broadening swath of ecological and social devastation that has battered the capitalist economic system nor the constantly renewed episodes of crisis that have convulsed the global capitalist system since the start of the century fit neatly with the primordial myth of liberalism and Western civilization.

This development is not without impact on the field of debate. The matter of what money actually is, which mainstream economics dismissed as an idle question decades ago, has become fashionable once again (at least outside the economic mainstream). Philosophers, ethnologists and dissident economists have published numerous works on money in recent years, primarily distancing themselves from the established concept of money in two respects: on one hand, they have attacked the classical derivation of money from exchange. In this regard, the new debate about money is responding to the all-transcendent implication of credit for the money of our time as it deviates from the old exchange paradigm and the phenomenon of debt moves into focus. On the other hand, the antics of the financial markets have given rise to positions that regard money (ostensibly a merely technical medium) as a force with irrational, indeed profoundly sacral traits.

11. Marx and the Blind Spots in the New Debate Around Money

If we were to search the historical theories for concepts of money that comprehend its modern incarnation as a genuinely irrational and metaphysical thing, we would not be burdened with an overabundance. By far the most elaborate analysis to adopt this position undoubtedly comes from Marx, who insisted that the fundamental irrationality of the capitalist mode of production culminates and becomes palpable in its money. In its search for potential theoretical reference points, we might therefore expect that the new debate around money would look to the concept of money found in the critique of political economy and sound out its explanatory power—all the more so given that Marx is no longer generally regarded as a dead dog and his name has at least re-entered circulation as a token. Yet Marx's theory of money as the segregated universal commodity has been completely disregarded in the current debate.

As explained above, his concept of money has been erroneously associated with metallist theory and treated as a variant of the classical money theory based on the exchange paradigm. Blind adoption of that incorrect association is certainly one reason why the newly aroused interest in the question of money has been paralleled by a widespread disinterest in Marx's approach. But there is something else that is significantly more important: while the new debate about money does attack individual theorems of mainstream economics, it does so without critically assessing its underlying false axioms. It does correctly break away from the notion of money as an ostensibly neutral medium for the movement of goods, but it also breathlessly adopts the paradigm of money as an entity that is foreign and external to the system of wealth production in the commodity society. The new money debate thus has a blind spot with respect to Marx's concept of money.

That debate has a particular quirk that arises in connection with this blind spot: its tendency to explain the irrationality of the contemporary money system diachronically, i.e. to derive it from money's prehistory. Marx's theory of money as the segregated universal commodity takes the transformation of all wealth production into commodity production and the dissolution of society into isolated private producers as a given. It thus exclusively refers to the capitalist mode of production, in which the commodity has become the universal form of wealth. As such, it argues in purely logical terms that attempt to decipher the internal logic of *this* social formation in which money occupies a key position and has a historically specific character that *cannot* be deduced from any of the various universal histories of money that span

multiple modes of production. To attempt to do so is to essentially treat money as an entity that is external to capitalist society—one that always remains the same and has only ever changed in superficial ways. This makes it seems obvious to derive the irrationality of today's money system from a fundamentally unchanging essence of money—a very pronounced tendency in today's debate around money. Even if their initial reason for paying closer attention to money was assuredly to examine the follies of contemporary money, books by David Graeber (2014), Christina von Braun (2012) and Christoph Türcke (2015) leap thousands of years into the past. They all engage in a kind of etymology of the language of the monetary and hope that doing so will shed light on the chasms in the contemporary financial system.

Of course, such archaeological efforts can undoubtedly chip away at the myth of money as an eternal, neutral medium for circulating commodities. David Graeber, ethnologist and pioneer of the Occupy movement, took that approach to profoundly critique Adam Smith's monetary origin myth and received a certain amount of ideological credit for it. In his book *Debt: The First 5000 Years*, he uses extensive ethnological material to expose the evolution of money from exchange as exactly what it is: a purely ideological construct. But as the title of his bestseller indicates, he replaces Smith's ontology of exchange with a no less misleading ontology of debt. Contemporary credit relations, which represent the most significant form of trade with the commodity money capital, look to him like the extension of sanctified personal debt relations by other means. But relative to classical or contemporary mainstream economics, this is not a step forward in knowledge. Instead, it is only an inversion of the existing projection: whereas the exchange-ontology perspective projects the dissolution of society into isolated private producers (a characteristic feature of the modern capitalist mode of production) onto prehistory, Graeber views the modern credit system through the lens of pre-modern personal debt relations. But modern credit relations must be understood simply as a specific variant of objectified commodity relations. Their basis is the transformation of money capital into a commodity, which in turn logically requires capital relations: the transformation of material wealth production into commodity production.

Adam Smith contrived a market-liberal fantasy image of traditional societies; Graeber, in his account of contemporary financial systems, turns fabulist and projects forms of personal domination onto them. That may correspond to the personifying notions of common sense and that is not the least of the reasons why it is so popular. But in analytical terms, it is a misleading path.

Graeber's is not the only interpretation that grows analytically weaker as it approaches the present. That is a shortcoming that more or less characterizes the entire body of recent criticism of money, which in turn is an outcome of those texts' initial premise. For all the differences in their argumentation, anyone who claims that only the "sacrificial religious" core (Türcke 2015) of earlier forms of money is reproduced in the modern financial system or that money is "backed by human bodies" (von Braun 2012) is assuming that money, in the end, has essentially always remained the same.

This fundamental error in the recent debate around money (an error that it shares with conventional economic theory) can only be overcome by placing the historically specific logic of the capitalist mode of production at the center of our critique—i.e. by thinking synchronically rather than diachronically. Only a systematic analysis of the mad socialization that modern money has produced can render the status and functionality of today's money comprehensible. Money gives the exchange-value side of particular commodities a form that is separate from their specific use values; it allows exchange value to face the world of commodities as a power unto itself. The prevailing thinking is fooled by this fetishistic illusion and treats money as though it were a thing that actually exists outside the system of commodity production and were not merely an externalized, tangible form of the internal contradictions of the world of commodities. One variant of this interpretive model is the classical and neoclassical concept of the "veil of money," according to which money is assumed to be a purely technical medium that must be ignored in order to see the actual essential economic processes. The representatives of the new debate around money knowingly disengage from the "classical and neoclassical monetary oblivion" (Pahl 2008: 9). They generally counter money's alleged "neutrality" with the idea that the monetary medium follows its own logic. This, however, is a questionable perspective. To adopt it is to risk drifting toward a complementary version of the old two-worlds concept. The development of the capitalist mode of production has always been accompanied by a regressive "anti-capitalism" that attacks a given financial or monetary order as an occupying force that is alien to the commodity society and pushes away responsibility for the evils of the capitalist form of socialization. Sayings like "money makes the world go round" or "money is the root of all evil" are indications of the extent to which the conventional understanding is conditioned to blame only the material embodiments that seem like threats to the commodity society. Particularly during times of crisis, intellectual leadership is consistently granted to ideologies that derive a pseudo-explanation for capitalism's disastrous developments from the cleavage in the internal connection between the universal commodity and particular commodities (see: Postone 2000; Lohoff

1998). In our own time, this mystification of the symptoms of monetary crisis as the alleged cause of the crisis is back in vogue.[17] Since the 1970s, the system of value accumulation based on the exploitation of real labor has reached its historical limit. Over the course of the intervening decades, the ceaseless increase in fictitious capital has become the engine of the global economy and is keeping the accumulation process running (see: Lohoff 2016). Since the US real estate bubble burst in 2008 and this type of capitalist wealth accumulation suffered a severe setback, all political camps have blamed the "unhealthy" financial market bubble for the malaise in the global economy.

Against this historical backdrop, there is something ambiguous about the newly aroused interest in money. On one hand, the new debate may mark the overdue onset of a serious analysis and critique of capitalism. In light of the tremendous importance of financial-industry accumulation for today's overall capitalist process, examination of the mysterious world of the monetary is indispensable for that. On the other hand, as long as the fundamental structure of the prevailing form of socialization (the dissolution of society into isolated private producers) remains hidden behind its material form (money), not only will the analytic scope of the new debate around money remain limited, but it may even provide the material for ideologically regressive approaches to processing the crisis.

References

von Braun, Christina (2012), *Der Preis des Geldes*, Berlin: Aufbau Verlag GmbH.
dtv Brockhaus Lexikon (1992), F.A. Brockhaus GmbH.
Graeber, David (2014), *Debt: The First 5000 Years*, Brooklyn, NY: Melville House.
Hicks, John (1967), *Critical Essays in Monetary Theory*, Oxford: Oxford University Press.
Lohoff, Ernst (1998), "Geldkritik und Antisemitismus," *Weg und Ziel* no. 2. Available online: http://www.krisis.org/1998/geldkritik-und-antisemitismus/ (accessed February 24, 2018).
Lohoff, Ernst, and Norbert Trenkle (2012), *Die große Entwertung*, Münster: Unrast Verlag.

[17] When the first worldwide industrial crisis stuck in 1857, Marx mocked this very phenomenon: "If speculation toward the close of a given commercial period appears as the immediate forerunner of the crash, it should not be forgotten that speculation itself was engendered in the previous phases of the period, and is therefore, itself a result and an accident, instead of the final cause and the substance. The political economists who pretend to explain the regular spasms of industry and commerce by speculation, resemble the now extinct school of natural philosophers who considered fever as the true cause of all maladies" (1857).

Lohoff, Ernst (2014), "Kapitalakkumulation ohne Wertakkumulation," *Krisis* 1: 29–38. Available online: http://www.krisis.org/2014/kapitalakkumulation-ohne-wertakkumulation/ (accessed February 24, 2018).
Lohoff, Ernst (2016), "Die letzten Tage des Weltkapitals," *Krisis* 5: 7–15. Available online: http://www.krisis.org/2016/die-letzten-tage-des-weltkapitals/ (accessed February 24, 2018).
Marx, Karl (1857), untitled article, *New York Tribune*, 15 December: 4.
Marx, Karl (1970), *A Contribution to the Critique of Political Economy*, trans. S.W. Ryazanskaya, New York: International Publishers.
Marx, Karl ([1867] 1990), *Capital, Volume I*, trans. B. Fowkes, London: Penguin Books.
Marx, Karl ([1894] 1991), *Capital, Volume III*, trans. D. Fernbach, London: Penguin Books.
Marx, Karl (1973), *Grundrisse: Foundations of the Critique of Political Economy*, trans. M. Nicolaus, London: Penguin Books.
Pahl, Hanno (2008), *Das Geld in der modernen Wirtschaft*, Frankfurt a.M.: Campus Verlag.
Polanyi, Karl ([1944] 2001), *The Great Transformation: The Political and Economic Origins of Our Time*, Boston: Beacon Press. Available online: http://www.wirtschaftslexikon.co/d/geldbasis/geldbasis.htm (accessed January 23, 2018).
Postone, Moishe (1993), *Time, Labor, and Social Domination*, Cambridge: Cambridge University Press, 1993.
Postone, Moishe (2000), *Anti-Semitism and National Socialism*, London: Chronos Publications.
Schumpeter, Joseph A. (1976), *Capitalism, Socialism and Democracy*, New York: Harper Collins.
Schumpeter, Joseph (1965), *History of Economic Analysis*, Oxford: Oxford University Press.
Smith, Adam (2009), *Lectures on Justice, Police, Revenue and Arms*, Cornell University Library.
Smith, Adam (1982), *The Wealth of Nations, Books I-III*, London, New York: Penguin Classics.
Stavenhagen, Gerhard (1969), *Geschichte der Wirtschaftstheorie*, Göttingen: Vandenhoeck & Ruprecht.
Türcke, Christoph (2015), *Mehr! Philosophie des Geldes*. Munich: C.H. Beck.

2.2

Monetary Mechanisms: Origins, Dynamics and Crisis[1]

Tobias Aufderheide-Kohl

Introduction

A functioning society *without* money is an intriguing idea. The destruction of living conditions, inequality extending all the way to desperate misery, and the most brutal (organized) violence are largely connected to greed for or the lack of money. The utopia of a sociality without monetary relations that preserves Western standards of living—preferably involving the total inclusion, in principle, of all people in a system offering the unconditional possibility to satisfy one's needs—appears all the more attractive, inasmuch as the current, nearly global, economic system based on money displays—as will be shown—an inherent, irreducible, tendency to crisis. This tendency makes the collapse of monetary systems in all historical cycles merely a matter of time. At the same time, however, the global economic system is characterized by an unprecedented power of innovation and productivity and it creates a never-before-seen level of material prosperity for a minority—and this too (as will be shown), it does as a result of a logic inherent to the economy. By way of economic relationships, a dynamic has been created that has developed a historically unique degree of complexity and that, on the basis of less fundamental mechanisms, has released a wide variety of problem-solving creativity.[2] On the other hand, the system follows a constitutive logic that cannot be stable in the long-run, but rather always already contains the seeds of its own decay. The emergence and destruction of money itself and of the creditor-debtor relations that follow from it are the foundation of this long-term self-destructive dynamic.[3] It is not *barter*—as is commonly assumed,

[1] This article is based in part on my dissertation, which was published in 2014.

[2] Cf. Marx's ode to the achievements of capitalism in *The Communist Manifesto* (Marx 1848), as well as similar passages in Max Weber and Georg Simmel.

[3] Karl Marx was one of the first and undoubtedly the most popular representative of the thesis that capitalism develops toward its own dissolution. Here, however, a fundamentally different conception than that of the falling rate of profit will be considered as ultimate cause.

including in the dominant economic theories—that is constitutive for economic activity, but rather the relations that are formed by way of monetary obligations: hence, relations of debt. These include not only credit relations between creditor and debtor, but also purchase and rent, as well as abiding labor relations in organizations. In their historical development, the expansion of debt relations always had the flip-side of accelerating progress and (unequally distributed) growth in wealth—and, thereby, of undermining their own foundations to the extent of precipitating the implosion of the system.

Our aim here is to illuminate this crisis tendency that is, so to say, enveloped in the monetary system, and to do so on the basis of a definition of money and a presentation of the economic dynamic that follows from such an understanding. In conclusion, we will consider the consequences for a post-monetary society.

The guiding questions of the sections to follow are:

- *What is money? How did it come into being and is its origination still instructive for the understanding of money today? If not from a supposedly natural urge to barter, how do markets come into being?*
- *What are the current real practices through which money comes into being and ceases to exist?*
- *How does the economy function as a monetary system? What is the logic of this type of material reproduction?*[4]
- *What forms of crises and destabilization result from this process?*
- *What relationships result from this system? What types of actions, which were previously entirely unthinkable, can now develop? What is the "contribution" of money to the coordination of the global system? What consequences would the elimination of money have for the material reproduction of the global system?*

1. What Is Money? Genesis of the Monetary Economy[5]

Money is elementary and ubiquitous in our society—its understanding, however, is not. The dominant theory's conception of money—namely, that of the neoclassical school and its off-shoots—as a neutral *means of exchange* is a

[4] There are unquestionably other types of material reproduction that should not be called "economy" here. Thus, in addition to systems of solidarity—for instance, in tribal societies—there are forms of material reproduction by way of power relations: for instance, in command societies (socialism, feudalism). See footnote 8.

[5] The historical perspective on money is complementary to the analysis of money and monetary mechanisms in the next section, but is not necessary for it.

fatal mistake, based on the historical speculations of distinguished pioneers of economics[6] who were not able to draw on the extensive historical, ethnographic and anthropological knowledge on the subject that we have today.

Accordingly, in neoclassical economics, money appears, for the most part, as a "veil" that has to be torn away, in order to recognize the supposedly true economic relationships: the exchange of goods and services by utility-maximizing rational actors on the basis of initial endowments.[7] In this model, money is nothing more than a unit of account or an additional good that is introduced as universal commodity and that facilitates exchange at the appropriate places: namely, in markets.

In any case, with their assumptions of unequal initial endowments, the propensity to exchange, the associated calculative rationality, etc., economists presuppose what needs to be explained. There is no ethnographic or anthropological evidence that there ever existed this kind of "nucleus" of economic activity, in the form of rational optimizers of resource combinations, assumed by the economists.[8] According to the counter-hypothesis, this form of purposive-rational maximizing production first developed *along with* the

[6] See, for instance, Jevons (1871), Menger ([1871] 1923) and Smith ([1776] 1812).

[7] For example, this is how one of the deans of economic theory, the Nobel Prize winner Paul Samuelson (1973), presents matters in his textbook on economics.

[8] There is an extensive body of literature by researchers who show that it was *not* exchange and the market to which money owes its existence and by authors drawing on them, who demonstrate how money must be derived rather from relationships of debt or how money is connected to the emergence of the state, the legal system (fines) or religious centers. Graeber (2011a, 2011b) and Sahlins (1972) argue against the neoclassical version from an ethnographic and anthropological perspective. Malinowski (1935: 45, 1922) too emphasizes that the neoclassical model of exchange cannot claim universal validity: in tribal societies, there are neither markets nor money. Polanyi (1957, 1968, [1944] 2001) makes this clear for feudal systems as well. Crawford (1970), Dalton (1965, 1967, 1971, 1982), and Frazer ([1890] 1996) have shown that in tribal societies, it is not exchange, but rather particular socio-institutional structures that regulate production. For refutation of the existence of a market economy in feudalism, see, above all, Bloch (1961: 67), Heinsohn and Steiger (Heinsohn 1983, 1984; Heinsohn and Steiger 1981, 1989, 1999, 2006a, 2006b). Wray (1998, 2002, 2004, 2005) and Martin (2001, 2003, 2008) also take up this point: they make the important suggestion to replace the exchange paradigm by the property paradigm and they distinguish between three different forms of material reproduction—solidarity, command and property societies—of which only the latter is regarded as an economy. Hoppe and Langton (1994) consider the nineteenth century. Goodhart (1989, 1998) makes a chartalist argument, which is also based on the numismatic perspective of Kraay (1964), Grierson (1959, 1977, 1978, 1979) and Cook (1958). For an economic-historical perspective, see Davies (1994), Hudson (2004a, 2004b), Hudson and Levine (1996), Zarlenga (1999), Ingham (2000, 2004a, 2004b), Henry (2004), and Gardiner (2004); cf. also Kurke (1999) and (on the origin of wage-labor in the colonies) Magubane (1979), as well as McIntosh (1988). On fundamental matters, Mitchell Innes (1913) and Keynes (1930). Even Issing (2007), a famous contemporary monetary theorist, regards the classical foundation of (neo-)classical economics as obsolete, without, however, being

formation of the modern economy and hence cannot be at the origin of the latter. The assumption of the universal resource-holder who is willing to exchange is a functionalist fallacy of economists that has, in the meanwhile, to be called untenable. It presupposes what needs to be explained and treats effect as cause: a *petio principii* or a *hysteron proteron*.

Contemporary approaches from areas other than economics or the social sciences offer alternatives. Thus, they treat money, for instance, as a medium that conveys information—which is here an insufficiently precise and too unspecific starting point—or a symbol of value, which is akin to the idea of money as universal commodity (of exchange). Other approaches have a try at giving more concise definitions: for instance, of money as everything that, in addition to its function as medium of exchange, also functions as means of payment and store of value; or money as claim, promise of payment, credit or also title to property, as defended by Heinsohn and Steiger ([1996] 2006a) in their still significant and pioneering work *Eigentum, Zins und Geld* (Property, Interest and Money).[9]

The historically best arguments suggest understanding money as a levy good defined by a state authority: hence, as a *means of debt redemption*. On this view, money came into being along with the first advanced civilizations around 7000 years ago, without necessarily being already based on monetary symbols. According to Schmandt-Besserath (1992), the requisite instruments, like payment systems ("tokens") and statistics, predate writing. Grain, precious metals and minted coins functioned historically as money, inasmuch they were by a ruler unilaterally specified as debt, a deadline for its payment were determined and non-compliance resulted in penalties. The levy good serving to settle the debts does not have to have any value of its own and can also be exclusively created by the ruler. This provides the ruler unique opportunities to establish a "power circuit," since the ruler does not only spend money, but can also force the money's *return*: for instance, by way of taxes.[10]

able to provide a convincing argument on behalf of his alternative thesis. According to the latter, money emerged from jewelry and symbols of rank: hence as a mixture of gift (Mauss) and power derivative (symbol of rank). For further self-critical voices within neoclassical economics on the genesis of money, see Friedman and Hahn (1990), Ostroy (1987) and Hart (1987).

9 And, previously, already in Heinsohn (1983).

10 For a fundamental treatment, see Martin (2003), who takes Adrian Oswald as point of departure. The original ancestor of the approach that involves seeing money as a state institution is so-called chartalism. See Knapp (1905). Keynes (1930: 4) also follows him. Abba Lerner and L. Randall Wray (see footnote 8) and Hudson (2004a: 113, 2004b: 111ff.) are modern representatives of this approach. On the development of the requisite accounting methods in the Middle East, see Hudson (2004a).

The advanced civilizations in which mercenaries assumed military importance were the first that also then introduced coinage. "Coined money . . . emerges where wars are fought with mercenaries, . . . not due to the needs of commerce."[11]

This arrangement of power, violence and subjects functioned by way of money, which, in the end, also gave rise to markets that were grouped around the military (Graeber 2011a: 178f.).[12] The military and markets are siblings; the generally maintained harmonious model of violence-free markets, on which peaceful surpluses are exchanged, is a chimera.[13] Markets thus arise as places for soldiers to obtain goods and services by their pay, but also between private persons on the basis of contracts—just like foreign trade—for the purpose of obtaining the levy good. Like Heinsohn and Steiger (2006a: 323), the chartalist theory of power thus views the market as a *derivative* phenomenon, not as the naturally emerging expression of the *homo economicus*.

The roots of money thus lie in taxes, levies and tributes, which are wrested from a dominated population or group by way of organized violence, mostly in order to finance the coercive apparatus of the military.[14] Where commodities and services are exchanged against money, competition arises, and this makes improved efficiency, innovation and competence necessary and rewarding to a hitherto unknown degree. Legislation regulates the different forms of emerging networks of debts and monetary obligations.[15]

By way of contracts, private relations of debt in both purchase and service relationships, as well as lien, rent, and credit, grow out of the relations of debt established by those with a monopoly of violence. All of these historically novel and revolutionary forms of relationship serve as the basis for a corresponding development of complexity that erodes previous structures of

[11] Nau (1972: 1467), cited in Martin (2003: 43). Also see Graeber (2011a: 426, note 11, 226f.), Price (1983), Wallace (1987), Schaps (2004: 96ff.), Redish (1992), Kraay (1964), Cook (1958), Reden (2002), and Bresson (2005). For discussion of the literature on the forms and expansion of mercenary payment, see Martin (2003: 43) and Nissen et al. (1991). See too the review article by Peacock (2006: 642), Wray (2005), Ingham (2004b: 100), and Mann (1990: 316, 330ff., 173). On mercenaries in the Middle Ages, also see Ferguson (2009: 64ff.).

[12] As was already done in Heinsohn (1983), this development can be linked to the emergence of patriarchy. Bott (2009, 2014) is also highly instructive on the emergence of patriarchy.

[13] See Kraay (1964). Cartledge et al. (2002) also emphasize that markets cannot be the cause of coinage.

[14] For an extensive presentation and further indications on historical background, see, Kohl (2014: ch. 4).

[15] Of course, there can also be a feeling of debt arising from moral obligation or coerced contributions of a parasitic-mafioso sort.

solidarity and permitted an explosion of innovations, which in the preceding hundred thousand years were limited to a few small steps. To the competitive pressures existing between private persons, there came to be added hostility between states, which, equipped with military apparatuses, saw lucrative targets for conquest in land, people, cities, and supplies of all sorts. The squeezing of the population and the concentration of resources in a center gave rise to further opportunities, which made wage-labor and hence specialization possible, and thereby also all sorts of forms of expression of power and pomp in architecture, art and science.

Money thus comes into being as levy good and *means of debt redemption*, whereby money and (tax) liability are defined by a ruler with a monetary monopoly. This constellation is still to be found today in every state. Along with the monopoly of violence and the legislative monopoly, the monetary monopoly figures among its core institutions.

2. Money and Credit in Modern Society

Even if the essence of money has not fundamentally changed, the methods of its production and destruction have become more refined. In modern states or currency areas, the money found in circulation is the result of a two-tier banking system with the central bank as its institutional center. In this system, money comes into being almost exclusively by way of *loans*,[16] which are made by private banks.[17]

In a two-tier banking system, in which the state, in order to guard against historically bad experiences of hyperinflation, no longer has direct responsibility for issuing money, central banks have the monopoly of creating and issuing money,[18] (in principle) independently of political influence.[19] This money is only indirectly provided to credit-seeking private actors or the state via private commercial banks. These banks are guided by the profit motive. Now, contrary to a widespread misunderstanding, these commercial banks do not receive the money by acquiring it in the form of *loans* from the

[16] Coins constitutes the exception to this rule. They come into being in fact as "net money," whose volume, however, is severely limited by law and is of little importance in light of the total volume.

[17] See the instructive presentation by Enghofer and Knospe (2005). The following presentation is, in part, adopted from Kohl (2014: 361ff.).

[18] Money has here to be distinguished from means of payment, since monetary claims—for instance, in the case of transfers between private actors—are also treated like money, hence as debt-extinguishing. We will return to this point later on.

[19] The decision-makers are, however, *politically* determined and appointed for their term of office.

central bank, but rather by providing *collateral* to the central bank under legally precisely determined conditions. In doing so, they undertake to redeem this collateral within a definite period of time: usually, for instance, three months, but at the latest before the claim comes due—hence before the deadline of the submitted credit contract. In return, the central bank monetizes the title against a fee that it has established (the discount rate): it thus gives the commercial bank money for the contractually determined period up to the redemption. The discount rate is not interest, but a money tax; accordingly, following deduction of the expenses of the central bank, it is also transferred to the state as "profit."

The central bank is thus not to be understood as a bank, but rather, to use a pointed formulation, as the unique instance in a currency area that, in accordance with definite rules, makes money out of (certain) paper and accounting processes and paper out of money. *It provides money that it does not per se have, but only first* creates *in providing it; and it receives money in return that in the moment in which it (legally) possesses it, and the contract is thereby fulfilled, is no longer money.* It is thus a sort of alchemist and anti-alchemist at the same time, which, by way of definite procedures, makes "gold" out of worthless material and worthless material out of "gold."[20]

The common opinion that the business of banks consists of accepting interest-bearing deposits from savers and loaning these in turn—for instance, to entrepreneurs—at a higher rate of interest, is hence misleading. Banks do not provide credit by loaning money, but rather by granting the borrower (sight-)deposits in an account at their bank.

As a rule, these titles to money that are accorded by the bank are described as *deposit money*: a concept that is, on the one hand, infelicitous, since it is precisely not a matter of money—just as little as a theater ticket is a performance, to paraphrase Keynes[21]—but, on the other hand, is understandable, since the *relinquishment of titles to money between bank customers*—better known as transfers[22]—are accepted as payment exactly as if one had received the money in cash.

[20] See the inspiring Faust interpretation by Binswanger (1985). Goethe was undoubtedly one of the first to succeed in representing modern money creation as a highly particular kind of alchemy. According to Graeber (2011a: 447, note 73) following Wennerlind (2003), in the seventeenth century, most European rulers employed alchemists to try to produce gold and silver for coins. It was only after their definitive failure that the era of paper money arrived in Europe.

[21] He is referring, however, to confusion about the value of money (Keynes 1914: 402).

[22] In the case of transfers between different banks, the banks have to move around real deposits in their central bank accounts (hence real money); since, however, reciprocal obligations can be balanced in inter-bank transactions as a whole, only a fraction of real money has to be moved around in the overall circulation of titles to money.

It follows from these basic processes, that for all sight deposits (titles to money), as well as money, there are claims of the same amount plus interest: at least plus the discount rate (as the basis of the private interest rate) as public tax on issuing money. The deposits accorded by banks are many times greater than the money issued—and are also not subject to any indirect control by the central bank.[23] On the aggregate, the deposits equal the debt.

Hence, a bank "creates" no money, but, at most, *credit*; it produces no money and also does not lend any, but rather it accords titles to money. This money-denominated documentation of monetary claims is always *prior* to the appearance of "new" money in the two-tier banking system.[24]

3. Economic Dynamics

If all deposits are based on debt and all debt is burdened with interest and (in part) a money tax (the discount rate), hence if, as a whole, more must be repaid as there is in circulation and economic actors, moreover, withdraw money from circulation by way of retaining profits, then the economy is a kind of chain letter: a Ponzi scheme. Paul C. Martin (1988, 1990) has developed this idea in the most consistent fashion. On his account, the dynamic of the capitalist system—or, as he puts it, the "debtist" system—is based on the fact that debtors are always under pressure to repay their loans and, to this end, are always dependent on new debtors to settle their debt and therefore later on an even higher level of general debt, in order to assure that these loans too remain serviceable until they come due. Hence, on the level of the economy as a whole, ever greater amounts of new loans are required, in order to repay ever greater old loans, which previously allowed smaller ones to be repaid. On this view, a "natural" equilibrium as a characteristic of economic mechanisms appears downright absurd. The refinancing problem perpetuates itself over time, which becomes the key parameter in this dynamic system: claims grow over the course of time due to interest; time costs money—and these costs have to be offset by way of these compensatory new debt relations and "new debtors."[25] In this context, the observable acceleration of all economic processes (productivity increases, just-in-time production, etc.) appears only logical.

[23] The requirement of a minimum reserve of money in relation to sight deposits is the only legal limitation to banks for granting sight deposits in the form of loans.

[24] The widespread multiplication theory of money creation votes to the contrary on all points.

[25] Benjamin Franklin's saying according to which "time is money" thus acquires a new dimension. As is well known, Franklin was referring to the opportunity costs of idleness (cited in Weber 1988: 31).

Martin thus links up with one of the key theses of Heinsohn (1984: 144): "The interest obligations of borrowers . . . remain the decisive . . . basis of the monetary economy." This existential worry is a burden for both debtor *and* creditor, as has been pointedly expressed in an aphorism attributed to Baron Rothschild: "If you have 100 pounds of debt, you do not sleep well; if you have 100,000 pounds of debt, your banker does not sleep well."[26] This pressure of debt, which, amidst the competition for scarce means of payment, drives innovation and productivity, is what lends the modern economy its peculiar dynamic. It is absent from tribal societies and socialism, as well as from—hypothetical—exchange economies.[27] From his chain-letter thesis, Martin thus draws the logical consequence from the assumption of an absence of *interest*, of *profit* and of all *savings* in the circulation of money, which would make it at least theoretically possible for debtors to repay their debt, pithily noting: "All of capitalism consists of nothing more than a (to the greatest extent possible) frictionless process of piling up debt" (Martin 1990: 82f.).[28] Accordingly, every purchase, all demand, is nothing but a "transfer" of other people's debts: only creditors' (unlikely) consumption of the offerings of their debtors would make the debts disappear.

The stream of debt does not only flow faster and faster, but also becomes broader. The piling up of debt, savings and interest effects make it ever more turbulent; the only alternative is thus tearing up the chain letter. It is true that, using a simulation, Steve Keen demonstrates that the effect of lacking interest payments does not necessarily emerge. He thus takes his distance from the position that is not only defended by Martin, but has been discussed among post-Keynesians for some twenty years now: namely, that not only profits, but (on the assumption of stable quantities) even interest payments appear not to be possible on the level of the economy as a whole (Rochon 2005: 125).[29] Under the strong assumptions of *either the consumption or reinvestment of all revenues*, Keen shows, drawing on "circuit theory,"[30] that the system can be

[26] See Martin (1988: 85) and for the Rothschild quotation, Martin (1988: 263). On the existential pressure, cf. also Heinsohn and Steiger (2006a).

[27] Cf. Heinsohn and Steiger (2006a: 232 and *passim*) on the constant need for the "defense" of one's property in the context of an individualism that creates existential insecurity. This leads to the calculation of net asset maximization—and increases "innovative dynamism" and "allocative efficiency."

[28] As is well known, Marx was also preoccupied by the question of how surplus-value comes into being. But his explanation that the capitalists themselves bring it into circulation, for instance, by way of luxury consumption is inadequate, since money does not emerge, after all, simply by reaching into the treasure trove of the capitalists.

[29] See too Bruun and Heyn-Johnsen (2009).

[30] In this theory, monetary circuits are modeled and "endogenous money" is taken as point of departure. Keen refers, in particular, to Graziani (1990, 2003). Cf. also Parguez and Seccareccia (2000) and Cahen-Fourot and Lavoie (2016).

stabilized, which also presupposes that the consumption of bankers (with periodic loan repayment installments) is equal to interest payments.[31] New loans are thus only necessary during an expansion and the constantly observable destabilization of the economy has its origin only in them or in an excessive increase—hence, in practice, in the banking system. Keen's model is, however an unrealistic representation:[32] above all, because in this scenario banks do not pursue any expansion of their own business (instead interest payments flow into consumption) and because it is assumed that the profits of businesses, despite falling returns (which, in the end, tend toward zero), are always reinvested at the same level—to say nothing of the absence of any savings. De facto, the compulsion to take on debt dominates the economy.

The striving for ever greater growth, which appears absurd in an ecological and sustainable mode of thought, thus appears economically logical and even necessary. Every (temporary) "stabilization" is based on an expansionary trend, nourished by constant pressure to increase productivity, innovation and, in general, profitability, which is exerted on participants in the economy who want to defend or improve their economic position: for the most part, under the existential pressure of debts (whether an investment loan or next month's rent). The "red queen" effect,[33] which is known from the theory of evolution, becomes a general principle for everyone who offers his or her labor-power and skill, like producers and service providers: You have to run faster and faster just to remain in the same place (and not to fall behind). Or in Baumol's words: "My central contention here is that what differentiates the prototype capitalist economy most sharply from all other economic systems is free-market pressures to force firms into a continuing process of innovation, *because it becomes a matter of life and death for many of them*" (Baumol 2002: viii). The success with regard to the development of technology and partial wealth is obvious, as is the damage in the form of inequality, exploitation and the over-exploitation of nature.

Modern economies are, in fact, characterized by high growth phases. Baumol speaks of a "growth miracle" and of the free market as "innovation

[31] Keen's model is thus based on an additive model with strong assumptions, in which revenues always entirely become expenditures within credit periods (Keen 2010: 20).

[32] Keen himself does not claim it is realistic. From this model, he derives a crisis theory that is strongly influenced by Minsky. Under the evolutionary conditions of economic activity in modern complex society, the avoidance of an unequal distribution of assets and capital remains illusory—just like an equal distribution of power, knowledge, and access. The peculiarities of a relatively novel social system—organizations—further exacerbate this problem.

[33] Based on a passage from Lewis Carroll's *Alice in Wonderland*.

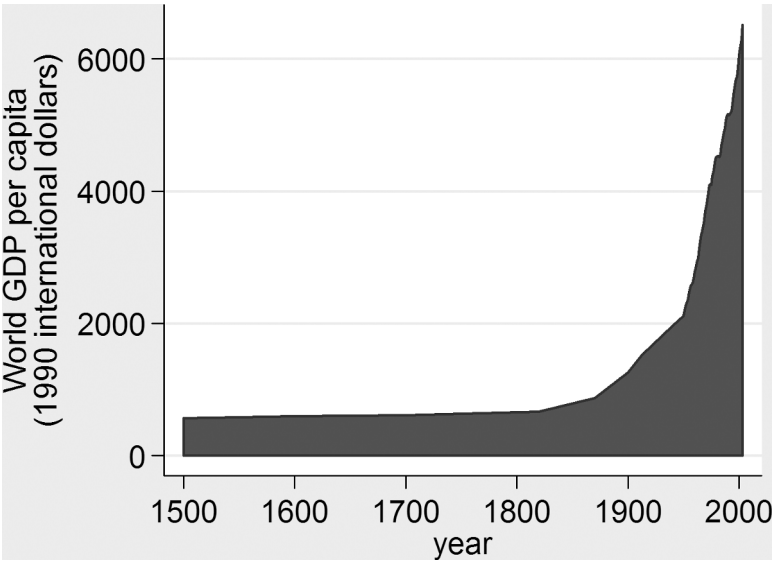

Figure 3 World GDP per capita. *Source*: Wikipedia, "World Economy," World GDP per capita between 1500–2003. https://en.wikipedia.org/wiki/File:World_GDP_per_capita_1500_to_2003.png (accessed August 25, 2017).

machine" (Baumol 2002).[34] According to Angus Maddison's estimate, from 1500 to 1820, per capita real gross domestic product (calculated on the basis of the 1990 dollar value) grew from around 770 to 1200 dollars (an annual rate of growth of 0.1 percent), but in the approximately half-as-long period from 1820 to 1998, from 1200 dollars to 17,921 dollars (1.51 percent annually).[35]

The modern economy has nothing to do with the dream world of harmonious equilibrium states, which now and again are catapulted a bit further on by technological progress. It is always rushing precipitously forward and is overturning itself in the process. It depends, like Münchhausen, on pulling itself from the morass of negative expectations by its own hair—as

[34] Very much in the spirit of Schumpeter, he sees creative entrepreneurs as heroes. In this regard, his arguments go in more or less the same direction as Heinsohn and Steiger (2006a: 337, 362ff.). The arguments of Sombart (1902) already went in this direction.

[35] Maddison (2001: 264f. and 28, 2007: 81) estimates that the growth rate of the world social product between 1500 and 1820 was 0.32 percent, as opposed to 2.25 percent for 1820–2003.

long as a creditworthy[36] state that is willing to take on debt does not do this for it. Thus, the economy does not break out of an equilibrium by virtue of progress, but rather it is in a constant process of growth (Binswanger 2006: 300). The "active economy" does not exist, but only the myriad of either intertemporally mutually supporting or disappointing decisions to invest now, later or not at all, to save, to take out a loan, to purchase, to rent, and, from the perspective of banks, to provide loans at all. It remains here a matter of playing for time, a chain letter that constantly runs the risk of tearing, a snowballing system that has always to roll faster and get bigger, since in its current structure it can endure *only through the dynamics of continuous exponential growth*. The only alternative would be contraction.[37] Expanded capacities (investment) make profits possible—and thereby also "accumulation"—but they also themselves require *more monetary demand*, which can only be established by way of new credit relations and are thereby simultaneously countered by the amassing of unconsumed monetary assets and fortunes which are no longer in the monetary circuit or only by means of financial assets.

In his model of a "*growth spiral*," which is driven by *compulsion* to grow and *propensity* to grow, Hans Christoph Binswanger neatly summarizes these findings and combines them with an ecological consideration of resources and energy, while including the "productive factors" of imagination and creativity (Binswanger 2006, 2009; Dorfner et al. 1994; Binswanger et al. 1978).[38]

Businesses, which "owe" debt-servicing at least in outside capital and dividends in their own capital, transform money into capital and are thereby *ab ovo* subject to the profit expectation as condition of their existence and as compensation for the risk taken in the pre-financing of production. As opposed to households, subsistence does not suffice for their explanation. (Family-owned businesses and other owner-run firms represent an exception, in which this can occur.) Thus, in his reflections, Binswanger too confirms Martin's theorem of the need for debt assumption. "This mean that the growth of net profits and interest must, minimally, correspond to the growth of capital and, vice-versa, that the growth in the volume of money to which the

[36] The creditworthiness of states does not mean that the repayment of *all* debts is ever expected, but only that the repayment of the contractually agreed amount at a given rate of interest by the agreed deadline—for the most part, by the taking out of a new loan—can be expected with sufficient certainty.

[37] According to Minsky (1982), a crisis in the form of the Great Depression has been hitherto prevented by public or central bank intervention—or, in other words, by "big government."

[38] Earlier post-Keynesian approaches come from Harrod (1934) and Domar (1946).

growth of capital gives rise must be sufficiently great to allow for the corresponding growth in net profits and in interest, which together comprise corporate profit" (Binswanger 2006: 315).

Hence, to this extent, there is "no alternative" to a necessary compulsion to grow on the level of the economy of the whole—the only alternative consists of a deflationary process of shrinkage, in which corporate profits constantly fall.[39] The historical changes that heralded this turbo-charging of growth into an upwards spiral economy were the creation of credit and the use of fossil fuels (Binswanger 2006: 309).

At the same time, acquiring money to secure one's own existence becomes, so to speak, "naturally" attractive. In conjunction with the *urge* to grow, the *compulsion* to grow is then taken for granted.

What is at issue in this form of thinking about the economy are *not allocation problems*—which are then related to financial relations ex post. Once again: "Production is for profit, not use" (Binswanger 2006: 187).[40] The use of resources and price formation are only thinkable in their embedding in *relations of obligation* that have constantly to be re-validated. The assumption of the "neutrality" of money seems grotesque in this context (Minsky [1986] 2008b: 159).

This process runs smoothly, so long as rising expectations and the rising investment that comes with them are not disappointed. "In a capitalist economy, profits motivate and reward business; they function to validate the past and induce the future" (Minsky [1986] 2008b: 191). If positive expectations predominate, a deviation-reinforcing feedback process (positive feedback) of profit expectations, investment, assets, and actual profit is thus established, which can result in a self-fulfilling prophecy of increased prosperity.

> Credit is the engine of prosperity in capitalism. It powers a time-machine with which we travel into the future. There, we pick the fruits of tomorrow, in order to enjoy them already today. This is the only way that growth comes into being: our material prosperity, in the truest sense of the word, is owed to the future. . . . Tomorrow is made available today. . . .

[39] It is clear that this is not a characterization of a universal property of systems of material reproduction. Heinsohn and Steiger have pointed out that a similar compulsion exists neither in command societies (for instance, in socialism or feudalism) nor in communities of solidarity.

[40] Cf. also Keen (2001: 193), with his critique of Say's Law—also in Walras's version: In Marx's case, it is not a consumption of profits that is assumed, but rather the accumulation of wealth, precisely with a growing concentration of assets.

> The income from the future that is advanced in credit can accomplish truly wondrous things in the present. Or it can also be spent in a highly irrational fashion. But, in any case, it comes with a crucial disadvantage: just like the film hero Marty McFly, it must return from whence it came. . . . Today's investment is the precondition that allows yesterday's investment to be serviced. It only occurs in sufficient quantity, however, if the prevailing expectation is that investment will also be made tomorrow. Financial market capitalism of the current sort thus involves a complicated, both forward and backward, linking of past, present and future.[41]

Thus, in credit, not only is "tomorrow made available today," but thanks to it, the conditions for tomorrow are created today, with the aim of being able to redeem one's debts in the future present. The tree, to continue with this image, from which we will pick tomorrow is planted with its own fruit. The well-known paradoxes of the time-traveler who becomes his own grandfather is to be found in credit.

The willingness to finance investment is often based on the calculation "that the existing state of affairs will continue indefinitely" (Keynes 1936: 152).[42] Like hardly anyone else, Minsky was able to make clear how false this assumption turns out to be and the consequences that follow: "But in truth neither the boom, nor the debt deflation, nor the stagnation, and certainly not a recovery or full-employment growth can continue indefinitely. *Each state nurtures forces that lead to its own destruction*" (Minsky [1975] 2008a: 126; author's emphasis).

It has thus become clear that with complex feedback loops of this sort, a stable equilibrium à la neoclassical economics would be highly unlikely and extremely fragile. There are no attractors leading toward a static state of balance, but rather a dynamic based on expectations and a related use of "assets" to take out and use loans. As long as the "chain letter" continues to be passed on—hence, as long as new debtors are found, who, on the expectation of future prosperity, allow the current debtors to repay—a favorable investment climate prevails, which hardly permits any doubt to arise about precisely the well-foundedness of these expectations. But if assessments—whether of banks (lenders) or entrepreneurs (borrowers)—about the future

[41] Strobl (2010: 7, 17, 150, and 156), who paraphrases Minsky ([1986] 2008b: 158ff.) in referring to the movie from the 1980s, *Back to the Future*.

[42] Keynes (1936: 149) also stresses that the estimate of yield must always be made on a doubtful basis of knowledge.

are more pessimistic or investment is being made in other places in the "globalized" world—hence, if local investment falls and is also not offset by foreign demand, public deficits or consumer debt[43]—then investors' yield expectations are disappointed and, along with liquidity, the required upwards tendency is also endangered: loans become non-performing; "haircuts" (reductions in the value of collateral) and "margin calls" (calls for additional collateral) threaten to spoil the previously favorable climate. Fire sales lead to the collapse of asset values; share prices plummet. And with a deflationary outlook—hence a fall in prices that makes it more and more difficult to fulfill nominally fixed obligations—and the loss in value of securities, both the desire to borrow and the willingness to lend decline. Like the preceding boom, this sets in motion a spiral of positive feedback, only this time in the opposite direction: reinforcing and fulfilling itself in the direction of gloomy future prospects and money destruction, since more debts are repaid or written off than new loans are provided.

A debt deflation[44] begins. On the stock market, it then becomes apparent that stocks that served as collateral for loans and the basis for a "wealth effect" were not only bets in a zero-sum game in which the one player wins what the other loses, and hence the total amount is always zero. Rather, it needs to be acknowledged that, in principle, just *one* single unsold share can make the price fall so much that *all* holders have to undertake adjustments in their balance sheets that could create liquidity problems for them: they lack "borrowing power" (Minsky [1986] 2008b: 208).

In addition to the effects of speculation—hence of building on increases in the value of assets[45]—the logic of exponential debt itself also leads to a point at which the development of growth turns into its opposite. It is this basic economic process that find its expression precisely in the context of the crisis that has prevailed in various forms since 2008. Within the framework of the form of economic activity that has hitherto obtained, every new unit of

[43] The USA, long praised for its "strong domestic market," is a perfect example of the fact that new debtors can also come from these spheres, but sooner or later the piling up of debt, rotation and prolongation—and thereby also the consumption that supports a certain level of prosperity—must come to an end, thus triggering deflation. In the USA, the ratio of the income of private households to their debt is, on average, over 100 percent.

[44] See the following section.

[45] Every bubble has its limit in the lending limit: The boom is over, at the latest, when the *costs of new borrowing* are greater than *the expected profit from increasing value*. The crash is then a destruction of claims: a massive write-off of assets and debts—and thereby also a fundamental revision of expectations (Martin 1990: 259). On "blow-off" and inflation, see Martin (1990: 382) and Martin (1985: 173ff).

net debt tends to have a lower marginal utility than the previous one. Over time and in the context of higher levels of debt, the marginal productivity of new debt falls in relation to gross value creation—if for no other reason, because more and more economic output flows into debt servicing. What is meant by the marginal productivity of debt is the ratio of the change in GNP to change in debt as an expression of the effect that an additional unit of debt has on value creation.[46] At the end of an increasingly complex system of debt, deflationary effects arise even with increasing debt, since greater and greater sums go into debt servicing, whereas consumption declines. The marginal productivity of new loans then becomes negative (see Figure 4 below).[47]

At the same time, debt is constantly increasing.

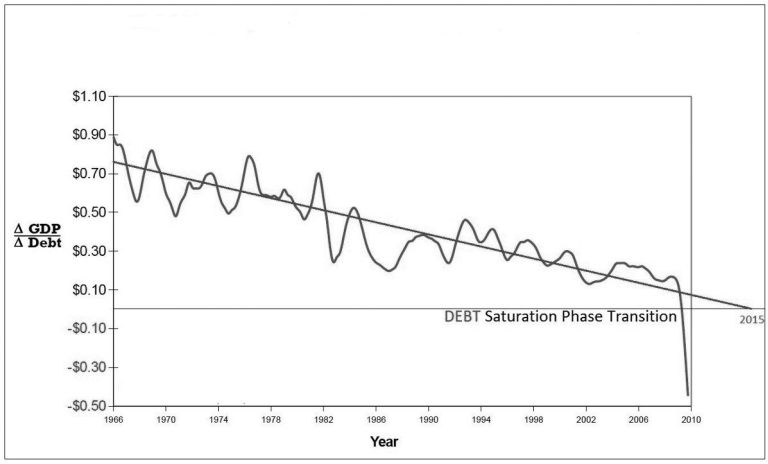

Figure 4 Marginal productivity of loans (USA).[48] *Source*: EconomicEdge; graph slightly revised. Available online: http://economicedge.blogspot.ch/2010/03/most-important-chart-of-century.html (accessed August 25, 2017).

[46] Needless to say, not all loans go into the productive sector. The massive sums that flow into speculation mostly have no impact on GNP and, above all, have the described destabilizing effect by way of the formation of bubbles. This ratio is thus an indicator of the *quality* of debts that do not (only) come into play in zero-sum games.

[47] Cf. Fekete (2009) following Melchior Palyi.

[48] An analogous breakdown of the effect on GNP of a dollar invested is also instructive for China, the global flagship of economic growth. Between 2000 and 2008, only $1.50 of assumed debt was required to generate $1 in GNP growth. In the meanwhile, this ratio is seven to one.

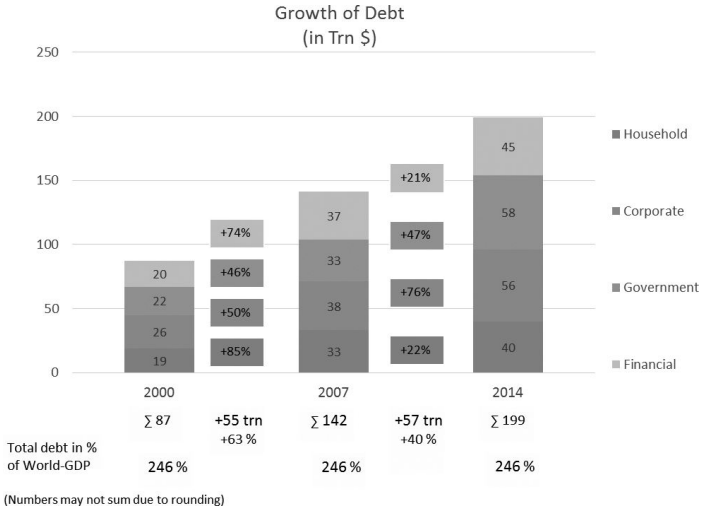

Figure 5 Growth of debt. *Source*: R. Dobbs, S. Lund, J. Woetzel, and M. Mutafchieva [McKinsey Global Institute, 2015]; graph slightly revised and expanded.

4. The Crisis: Boom and Bust or the Instability of Stability

The previous section already contained echoes of the basic features of the "Debt Deflation Theory" of Irving Fisher (1933). The theory has lost none of its topicality since the Great Depression—notwithstanding the constantly repeated mantra that "this time it is different": a new market, a new stability, a new sort of growth.[49] Starting in the middle of 1921, the Dow Jones Index rose from a level of around 64 points to 381 points in October 1929, then it fell to *41 points* by the middle of 1932. (It reached its new all-time high in January of 2018 with 26,616 points.)

Irving Fisher's continuing (public) misjudgments of the share price trend did not only cost him his fortune. It also discredited him so badly that it affected the reception of the theory of deflationary depression that he developed in 1933—probably out of astonishment about his own inability to understand the crisis. The theory remained almost completely ignored until the 1980s. In it, Fischer (1933) provided a groundbreaking theory about how to understand the basic mechanisms of crisis in monetary economies. What

[49] On the "this-time-is-different syndrome," see also Reinhart and Rogoff (2009: 208ff.).

is key here is the implosion of a credit bubble with a series of self-reinforcing factors, resulting in a downward spiral in Binswanger's sense. Per Fisher (1933: 342),[50] starting from a situation of over-indebtedness, the crisis develops in a circle of falling prices and fire sales, from which there results a further decline in prices, etc. In this mechanism of deflationary positive feedback, it remains an open question where the starting point is to be found. In his financial instability hypothesis, Minsky, drawing on what he regarded as Keynes's revolutionary insight, saw it in stability itself: stability is inherently destabilizing. He identifies the reason for this in the uncertainty and the conditions of financial relations and expectations (Dymski and Pollin 1992: 36). As the basic relationships of the modern economy, the structures of the economic social system situationally undergo dynamic change with changing future expectations (Minsky [1975] 2008a: 54f.; Minsky [1986] 2008b: 194).

Due to their neglecting such factors—types of financial relationships, institutions, uncertainty, the temporal dimension—classical and neoclassical economics are able to explain neither the causes nor the advent nor the duration of depressions. In Keynes's theory, by contrast, they were already normal events: not exogenous disturbances in the "boom and bust,"[51] but rather features inherent to the economy.[52]

The expansionary logic of the upswing is the only way in which the modern economy can maintain its level: "We are dealing with a system that is inherently unstable, and the fundamental instability is 'upward'" (Minsky [1975] 2008a: 162). In Minsky's interpretation, the boom is the decisive factor. On the basis of the boom, economic actors take on more burdensome liabilities in relation to future income. The projected yields from capital assets are uncertain and determined via market processes; the debt service, on the other hand, is nominally fixed. Portfolios, moreover, include obligations and assets that embody yesterday's expectations and, at the same time, make possible and bind future receipts—whereby the yields can satisfy the expectations or disappoint them. In an uncertain world, in which one is neither entirely clear about the past nor can predict the future, investments necessarily have a speculative character (Minsky [1975] 2008a: 75 and 140).

It is the upswing and the boom phase that typically produce risky behavior. Stability thus has a destabilizing effect. The calculations guiding the

[50] See too Kindleberger (1989: 110).

[51] Jevons suggested periodic sunspots as explanation.

[52] Keynes's perspective in his work is not coherent. In chapter 18 of his *General Theory* (1936), crises in the business cycle do not appear. But in chapters 12 and 22 and, above all, in the article in which he reacted to a criticism by Viner (Keynes 1937), a stronger cycle is described—without, however, an adequate explanation and definition of it being provided. Cf. Minsky ([1975] 2008a: 60f.).

investments (loans) follow highly different logics: concerning wherein their yield consists, how to secure one's own liquidity, and what follows for the level of debt to be taken on. This also applies, as an exact mirror image, for the other side: for the banks as financers.[53]

Financing forms of differing degrees of robustness exist side-by-side in an economy; but depending on the market and the conjuncture, different forms can predominate. These forms can also unintentionally transform into others: as when, for instance, a hedge unit slides into the speculative domain due to rising interest rates. Specific opportunities and risks result for economic units of different types, depending on the distribution of obligation structures. In an economy characterized by robust hedge-financing, they can create particularly profitable opportunities for entrepreneurs undertaking speculative operations—which simultaneously and inherently renders the economy more fragile.[54]

Thus, after the Great Depression and the Second World War, the leading industrial powers—all of them, apart from the USA, having been devastated by the war—developed with high growth rates and an extremely robust financial structure, in which financial innovations and financial speculation were still kept to a minimum within the Bretton Woods system. A relatively equal distribution of wealth prevailed,[55] and there were high growth rates on the basis of productive debt. Starting in the 1960s, the ratio of debt to income grew constantly: in the USA in 1981, the private sector (private households, financial companies and other businesses) had debts representing 123 percent of gross national product; in 2008, they already represented 290 percent. In the case of households—one thinks of the much-vaunted strength of the US domestic market—debt rose from 48 percent of gross national product in 1981 to 100 percent in 2009. The ratio of debt to disposable income rose from 65 to 135 percent. In Great Britain, at the end of 2007, private debt amounted to fully 177 percent of disposable income and mortgage debt amounted to 132 percent (Roubini and Mihm 2010: 82f.; Wagenknecht 2009: 29).[56] The most striking development is, however, to be found in the financial sector. There, bank debt increased fivefold between 1981 and 2008, from 22 percent to 117 percent of gross domestic product.

[53] Minsky distinguishes between three forms of financing: *hedge*, *speculative* and *Ponzi* (Minsky [1986] 2008b: 230f.; Minsky 1982: 93; Dymski and Pollin 1992: 39). For an alternative description of financing types, see Davidson (1972).

[54] On the impact of speculation and bubble effects from a historical perspective, see Kindleberger (1989).

[55] On the development of a highly unequal distribution, see Picketty (2014). For a critique of the neglecting of debt relations, see Stelter (2014).

[56] In 1980, the corresponding debt-to-income ratio came to 58 percent. In addition to consumer debt, educational and medical expenses constitute a large part of such debt.

The debt curves are growing exponentially in Western countries—and they show that the mass write-off of de facto irrecoverable debt or, in other words, debt deflation has practically not occurred again in the postwar period. The source of these debts is, to a considerable extent, *states*, which increasingly stepped in as assumers of debt in the most recent financial crises: using their deficits to replace, to a large degree, the otherwise cyclically eroding demand or using bailouts directly to prevent the insolvency of major (financial) companies and, thus, to socialize losses. At the same time, as the largest assumers of debts, they participate in creating an inflationary environment for financial assets and in building up (investment-seeking) bank balances, which are the counter-position to their debts. The danger of deflation is near when further loans can no longer be taken out, either because collateral has been devalued or repayment is seen as precarious, or when there is no longer the desire to take out more loans, since they are not regarded as lucrative. More debt is repaid than is assumed; demand falls, making prior investments unprofitable and new ones unattractive; unemployment rises. If no potential assumer of debt steps in, the chain letter on which the economy is based begins to tear.

5. Society Without Money

The foregoing makes clear the profound significance that the development of economic rationality by way of monetary systems had for human development.

There are societies without money: simple societies, which live sustainably and do not recognize ownership rights, but do indeed recognize possession. In any case, there is not much in them that would provoke envy. They are held together by a strong sense of solidarity, which is, for the most part, based on a network of kinship relations. Their size rarely surpasses the so-called Dunbar number of approximately 120 persons, such that everyone knows everyone else well enough to know about their social positioning too. They are mostly consensus-oriented societies, which, for the most part, are highly resistant to the integration of foreigners (which is not to say that they do not display hospitality), have developed only a relatively low technological and medical level, have known relatively little innovation in their history, and have a conservative outlook. This is probably not the model that one understands by a post-monetary society.

The basis for the current complexity of society is not equality, cooperation, consensus, and solidarity in the spirit of tribal communities, but rather an entirely different form of sociality. An important pillar of this type of sociality

has been described in monetary mechanisms and their peculiar economic logic of evolution: debt pressure and pressure to innovate; competition; role differentiation; coordination and disciplining by way of wage-labor; expansion of production and consumption, etc. All of this has central social importance, because monetary relations account for a large part of the *action coordination* that is necessary for social reproduction. Only power relations have similar importance for reproduction on the globally-networked social level. Action coordination is the core of sociality. Now, money—in conjunction with the necessity of systems of power and legal systems (or, in other words, of states)—is the means that makes coordination effectively possible in complex societies without cooperation, without trust, and without personal knowledge of the other person. In this sense, our complex society is in desperate need of money, since it is the substitute for solidarity. The regrettable side-effect is that greed and self-aggrandizement are no longer laughed at, like in tribal societies, but rather become the behavioral standard. Money replaces solidarity as basic social principle, since it integrates individuals in a complex structure—above all, by way of organizations.

It was only thanks to debt pressures, competition and monetarily-structured states that innovative power and productivity first exploded. Industrialization would not have been conceivable merely through the (indispensable) use of fossil fuels, as well as technical knowledge. It also required modern forms of financing, and this "unfettering of the productive forces" (Marx), along with the compulsion for growth and stable states founded on the rule of law, led to unprecedented (temporary?) success for the human species.

Whereas some five million people lived on the earth 10,000 years ago, there were already 250 million at the time of the apex of Roman civilization and one billion in the nineteenth century. Only another 100 years were required for the next billion, then some thirty years, and since then, the population has been growing by one billion people around every fifteen years. And, at the same time, human beings have truly subjected the earth. Human beings are a force of nature whose action has resulted in the extermination of as many as animals as otherwise only died in the great prehistoric waves of extinction (Kolbert 2016). They are an earthly force that with some forty-two billion tons of moved rock and soil can bring about as much as wind erosion, glaciers, mountain range formation, and underwater volcanoes all together.

The share of human beings, in the meanwhile, constitutes 25 percent of the biomass of all terrestrial vertebrates in the areas in which they live; together with the livestock that human beings keep, this figure comes to over 90 percent of the biomass. Of this livestock, humans slaughter 60 billion

animals per year, in order to satisfy their hunger for meat (in the first world, about 80 kg per capita[57]) whereby only animals the size of a chicken and larger are included in this calculation. To this, about one trillion caught fish have to be added—not counting bycatch, which would more than double the catch weight again.

Human beings have achieved technological progress, inasmuch as they have created gigantic growth in productivity and prosperity by way of the technization of transport and physical work. The fossil fuels on which this is based demand alternatives, which are not yet in sight on this order of magnitude—above all, oil, of which more than 90 million barrels or about 15 billion liters are used daily with rising tendency (in 1945, 6 million barrels were still enough).

If one follows the argumentation, the significance of money for action coordination and hence sociality itself becomes clear. Initiation and discipline are internalized by way of the pressure for self-preservation and the pressure of debt or they provide direct motivation for stronger or weaker forms of subordination as salaried employees in organizations. The utility of money lies in the preservation of a dynamic that compels nearly everyone who is not dependent on welfare to act economically: hence, to insist on contracts for the monetary relationship. And whereas, for instance, in the case of most academic and many "high cultural" professions, far from enough voluntary willingness to pay could be created, one is dependent on the redistribution of compulsory contributions by the state. Everybody is integrated into the network of obligations of debt in their roles as lender ~ borrower (creditor ~ debtor), seller ~ buyer (producer ~ consumer), corporation ~ shareholder, employer ~ employee, or even as gift-giver ~ gift-recipient.[58] Also and especially organizations as legal persons are subject to the compulsion to refinance: they have to come up with the required means themselves (businesses) or compel others to provide them (states, organized crime) or they have to depend on donations (for example, NGOs). By way of their hierarchies, organizations are action-coordinating "machines" *par excellence* and the overwhelming majority are "manic obsessive" in their orientation toward goals like profitability and/or expanding power without any built-in empathy. If one grasps organizations as entities capable of taking action, it would hardly be false to classify corporations, above all, as psychopaths.[59]

[57] Internationally, so-called "meat production" rose from around 71 million tons of carcass weight in 1961 to 320 million tons in 2016—an increase of around 350 percent (Börnecke 2016).

[58] Following Kelso and Engstrøm (2006), the tilde is used here to mark complementary relationships.

[59] As is suggested in the Canadian documentary film *The Corporation*.

The monetary economy enables both extreme inequality *and* extreme prosperity, such that the poor in welfare states have a higher standard of living than the greater part of the global population—to say nothing of the around 1 percent of the richest people who hold 40 percent of the wealth (the richest 10 percent of the population holds around 85 percent).

Both the crisis and the success of money are thus multidimensional and affect the whole world, the complexity of society and the existence of individuals. To abandon the one without the other—hence to secure resources and living spaces, as well as coordination, productivity, innovation, and at least a minimum level of prosperity, without subjecting material reproduction to the pressure of debt by way of loans, purchase, etc.—raises far-reaching questions.

Advocates of the "sovereign money initiative" or modern money theory[60] have, for instance, put forward the idea of alleviating debt pressure by relieving commercial banks of their central role as initial lenders and instead giving states the possibility of directly making payments via the central bank. But this idea is already highly problematic in light of the logic of expenditure in power systems. Historically, such an idea led to a total inflationary devaluation of money.

The opportunities that I see for a post-monetary society are to be found in automation and the increasing organization of society by way of artificial intelligence. If these could be, on the one hand, so highly developed and also instrumentally controllable by human beings that they make possible both comprehensive processes of production and innovation and novel forms of energy provision and medical treatment—hence, if all the visions and utopias of a Ray Kurzweil, for instance, become true—then provisioning and the constant pressure for development or problem-solving to which a complex society gives rise can be solved without money and without organizations. This is simply because the only social role of human beings here is as consumers and, apart from familial reproduction, they hardly have to play a productive part any more: complex coordination of action becomes unnecessary. Human beings would, however, then be little more than totally dependent captives in a self-built zoo and pure recipients—with all the risks of psychic problems that can be observed in captive animals. On the other hand, this zoo is the whole earth—with all its opportunities for *l'art pour l'art*. The desirability of such a future, however, involves more question marks than exclamation marks.

[60] See Huber and Robertson (2008); see too the approach of L. Randall Wray and Abba Lerner.

References

Baumol, W. (2002), *The Free-Market Innovation Machine: Analyzing the Growth Miracle of Capitalism*, Princeton, NJ: Princeton University Press.

Binswanger, H. C. (1985), *Geld und Magie: Deutung und Kritik der modernen Wirtschaft anhand von Goethes Faust*, Stuttgart: Edition Weitbrecht.

Binswanger, H. C. (2006), *Die Wachstumsspirale: Geld, Energie und Imagination in der Dynamik des Marktprozesses*, Marburg: Metropolis.

Binswanger, H. C. (2009), *Vorwärts zur Mässigung: Perspektiven einer nachhaltigen Wirtschaft*, Hamburg: Murmann.

Binswanger, H. C., W. Geissberger, and T. Ginsburg (eds.) (1978), *Wege aus der Wohlstandsfalle: Der NAWU-Report: Strategien gegen Arbeitslosigkeit und Umweltkrise*, Frankfurt a. M.: Fischer.

Bloch, M. L. B (1961), *Feudal Society*, Chicago: University of Chicago Press.

Börnecke, S. (2016), "Fleischkonsum: Amerikaner essen mehr Fleisch," *Frankfurter Rundschau*, 5 December. Available online: http://www.fr.de/wirtschaft/fleischkonsum-amerikaner-essen-mehr-fleisch-a-729199 (accessed June 26, 2017).

Bott, G. (2009), *Die Erfindung der Götter: Essays zur politischen Theologie*, Norderstedt: Books on Demand.

Bott, G. (2014), *Die Erfindung der Götter: Essays zur politischen Theologie*, Volume 2, Norderstedt: BoD.

Bresson, A. (2005), "Coinage and Money Supply in the Hellenistic Age," in Z. Archibald, J. K. Davies, and G. Gabrielsen (eds.), *Making, Moving and Managing: The New World of Ancient Economies, 323–31 BC.*, 44–72, Oxford: Oxbow Books.

Bruun, C., and C. Heyn-Johnsen (2009), "The Paradox of Monetary Profits: An Obstacle to Understanding Financial and Economic Crisis?," Economics Discussion Papers No. 2009–59.

Cahen-Fourot, L., and M. Lavoie (2016), "Ecological Monetary Economics: A Post-Keynesian Critique," *Ecological Economics*, 126: 163–168.

Cartledge, P. A., E. E. Cohen, and L. Foxhall (2002), *Money, Labour and Land: Approaches to the Economies of Ancient Greece*, London: Routledge.

Cook, R. M. (1958), "Speculations on the Origins of Coinage," *Historia: Zeitschrift für Alte Geschichte,* 7 (3): 257–262.

Crawford, M. (1970), "Money and Exchange in the Roman World," *The Journal of Roman Studies,* 60: 40–48.

Dalton, G. (1965), "Primitive Money," *American Anthropologist,* 67 (1): 44–65.

Dalton, G. (1967), *Tribal and Peasant Economies: Readings in Economic Anthropology*, Garden City, NY: Natural History Press.

Dalton, G. (1971), *Economic Anthropology and Development: Essays on Tribal and Peasant Economies*, New York: Basic Books.

Dalton, G. (1982), "Barter," *Journal of Economic Issues,* 16 (1): 181–190.

Davidson, P. (1972), *Money and the Real World*, New York: Wiley.

Davies, G. (1994), *A History of Money: From Ancient Times to the Present Day*, Cardiff: University of Wales Press.
Dobbs R., Lund S., Woetzel, J. and Mutafchieva, M. (2015), *Debt and (Not Much) Deleveraging*, McKinsey Global Institute (Report).
Domar, E. D. (1946), "Capital Expansion, Rate of Growth, and Employment," *Econometrica: Journal of the Econometric Society,* 14 (2): 137–147.
Dorfner, E., H. C. Binswanger, and P. von Flotow (1994), "Der Zins in der modernen Gesellschaft," in H. C. Binswanger and P. von Flotow (eds.), *Geld und Wachstum: Georg Simmels, Philosophie des Geldes,*" 134–160, Frankfurt a. M.: Suhrkamp.
Dymski, G., and R. Pollin (1992), "Hyman Minsky as Hedgehog: The Power of the Wall Street Paradigm," in S. M. Fazzari, and D. B. Papadimitriou (eds.), *Financial Conditions and Macroeconomic Performance: Essays in Honor of Hyman P. Minsky*, 27–62, Armonk, NY: M.E. Sharpe.
Enghofer, S., and M. Knospe (2005), "Verschuldung, Geld und Zins—Grundlegende Kategorien einer Wirtschaftstheorie", Universität Bayreuth (Lehrstuhl für Institutionenökonomik), Arbeitspapier Nr. 2.
Fekete, A. E. (2009), "The Marginal Productivity of Debt," San Francisco School of Economics. Available online: http://www.professorfekete.com/articles%5CAEFTheMarginalProductivityOfDebt.pdf (accessed August 25, 2017).
Ferguson, N. ([2008] 2009), *Der Aufstieg des Geldes: Die Währung der Geschichte (The Ascent of Money: A Financial History of the World)*, Berlin: Econ.
Fisher, I. (1933), "The Debt-Deflation Theory of Great Depressions," *Econometrica,* 1 (4): 337–357.
Frazer, J. G. ([1890] 1996), *The Golden Bough*, Harmondsworth: Penguin.
Friedman, B. M., and F. Hahn eds. (1990), *Handbook of Monetary Economics*, Amsterdam: Elsevier.
Gardiner, G. W. (2004), "The Primacy of Trade Debts in the Development of Money," in L. R. Wray (ed.), *Credit and State Theories of Money: The Contributions of A. Mitchell Innes*, 128–172, Cheltenham, UK: Edward Elgar.
Goodhart, C. A. E. (1989), *Money, Information, and Uncertainty*, Cambridge, MA: MIT Press.
Goodhart, C. A. E. (1998), "The Two Concepts of Money: Implications for the Analysis of Optimal Currency Areas," *European Journal of Political Economy,* 14 (3): 407–432.
Graeber, D. (2011a), *Debt: The First 5,000 Years*, Brooklyn, NY: Melville House.
Graeber, D. (2011b), "On The Invention of Money—Notes on Sex, Adventure, Monomaniacal Sociopathy and the True Function of Economics. A Reply to Robert Murphy's 'Have Anthropologists Overturned Menger?'" Available online: http://www.nakedcapitalism.com/2011/09/david-graeber-on-the-invention-of-money-%E2%80%93-notes-on-sex-adventure-monomaniacal-sociopathy-and-the-true-function-of-economics.html (accessed June 26, 2017).
Graziani, A. (1990), "Theory of the Monetary Circuit," *Economies et Sociétés: Monnaie et Production,* 24 (7): 7–36.

Graziani, A. (2003), *The Monetary Theory of Production*, New York: Cambridge University Press.
Grierson, P. (1959), "Commerce in the Dark Ages: A Critique of the Evidence," *Transactions of the Royal Historical Society,* 9: 123–140.
Grierson, P. (1977), *The Origins of Money*, London: Athlone Press.
Grierson, P. (1978), "The Origins of Money," *Research in Economic Anthropology,* 1: 1–35.
Grierson, P. (1979), *Dark Age Numismatics: Selected Studies*, London: Variorum Reprints.
Harrod, R. F. (1934), "The Expansion of Credit in an Advancing Community," *Economica,* 1 (3): 287–299.
Hart, K. (1987), "Barter," in J. Eatwell, M. Milgate and P. Newman (eds.), *The New Fischer: A Dictionary of Economics*. Available online: http://dictionaryofeconomics.frankfurt-school.de/article?id=pde1987_X000143 (accessed August 25, 2017).
Heinsohn, G. (1983), "Privates Grundeigentum, patriarchalische Monogamie und geldwirtschaftliche Produktion: Eine sozialtheoretische Rekonstruktion zur Antike," PhD. Diss., Universität Bremen.
Heinsohn, G. (1984), *Privateigentum, Patriarchat, Geldwirtschaft: Eine sozialtheoretische Rekonstruktion zur Antike*, Frankfurt a. M.: Suhrkamp.
Heinsohn, G., and O. Steiger (1981), "Geld, Produktivität und Unsicherheit in Kapitalismus und Sozialismus oder von den Lollarden Wat Tylers zur Solidarität Lech Walesas," *Leviathan,* 9 (2): 164–194.
Heinsohn, G., and O. Steiger (1989), "The Veil of Barter: The Solution to the Task of Obtaining Representations of an Economy in Which Money Is Essential," in J. A. Kregel (ed.), *Inflation and Income Distribution in Capitalist Crisis: Essays in Memory of Sidney Weintraub*, 175–199, New York: New York University Press.
Heinsohn, G., and O. Steiger (1999), "Theorie der Eigentumsrechte und die real bills fallacy: Antworten auf unsere Kritiker," in K. Betz and T. Roy (eds.), *Privateigentum und Geld: Kontroversen um den Ansatz von Heinsohn und Steiger*, 311–330, Marburg: Metropolis.
Heinsohn, G., and O. Steiger ([1996] 2006a), *Eigentum, Zins und Geld: Ungelöste Rätsel der Wirtschaftswissenschaft*, Marburg: Metropolis.
Heinsohn, G., and O. Steiger (2006b), *Eigentumsökonomik: Eigentumstheorie des Wirtschaftens versus Wirtschaftstheorie ohne Eigentum*, Marburg: Metropolis.
Henry, J. F. (2004), "The Social Origins of Money: The Case of Egypt," in L. R. Wray (ed.), *Credit and State Theories of Money: The Contributions of A. Mitchell Innes*, 79–98, Cheltenham, UK: Edward Elgar.
Hoppe, G., and J. Langton (1994), *Peasantry to Capitalism: Western Östergötland in the Nineteenth Century*, Cambridge, UK: Cambridge University Press.
Huber, J., and J. Robertson (2008), *Geldschöpfung in öffentlicher Hand: Weg zu einer gerechten Geldordnung im Informationszeitalter*, Kiel: Gauke.
Hudson, M. (2004a), "Mesopotamian Origins and Early Evolution of Money and Account-Keeping," in M. Hudson and C. Wunsch (eds.), *Creating Economic*

Order: Record-Keeping, Standardization, and the Development of Accounting in the Ancient Near East, 303–330, Bethesda, MD: CDL Press.
Hudson, M. (2004b), "The Archaeology of Money: Debt versus Barter Theories of Money's Origins," in L. R. Wray (ed.), *Credit and State Theories of Money: The Contributions of A. Mitchell Innes*, 99–127, Cheltenham, UK: Edward Elgar.
Hudson, M., and B. A. Levine (eds.) (1996), *Privatization in the Ancient Near East and Classical World*, Cambridge, MA: Peabody Museum of Archaeology and Ethnology.
Ingham, G. (2000), "'Babylonian Madness': On the Historical and Sociological Origins of Money," in J. Smithin (ed.), *What is Money?*, 16–41, London: Routledge.
Ingham, G. (2004a), "The Emergence of Capitalist Credit Money," in L. R. Wray (ed.), *Credit and State Theories of Money: The Contributions of A. Mitchell Innes*, 173–222, Cheltenham, UK: Edward Elgar.
Ingham, G. (2004b), *The Nature of Money*, Cambridge: Polity.
Issing, O. (2007), *Einführung in die Geldtheorie*, München: Vahlen.
Jevons, W. S. (1871), *The Theory of Political Economy*, London: Macmillan.
Keen, S. (2001), *Debunking Economics: The Naked Emperor of the Social Sciences*, London: Zed Books.
Keen, S. (2010), "Solving the Paradox of Monetary Profits," *Economics,* 4, 2010–31. Available online: http://dx.doi.org/10.5018/economics-ejournal.ja.2010-31 (accessed August 25, 2017).
Kelso, J. A. S., and D. A. Engstrøm (2006), *The Complementary Nature*, Cambridge, MA: MIT Press.
Keynes, J. M. (1914), *The Collected Writings of John Maynard Keynes*, vol. 11, London: Macmillan.
Keynes, J. M. (1930), *A Treatise on Money*, vol. 1, London: Macmillan.
Keynes, J. M. (1936), *The General Theory of Employment, Interest and Money*, London: Macmillan.
Keynes, J. M. (1937), "The General Theory of Employment," *Quarterly Journal of Economics,* 51: 209–223.
Kindleberger, C. P. (1989), *Manias, Panics, and Crashes: A History of Financial Crises*, New York: Basic Books.
Knapp, G. F. (1905), *Staatliche Theorie des Geldes*, Leipzig: Duncker and Humblot.
Kohl, T. (2014), *Geld und Gesellschaft: Zu Entstehung, Funktionsweise und Kollaps von monetären Mechanismen, Zivilisation und sozialen Strukturen*, Marburg: Metropolis.
Kolbert, E. (2016), *Das sechste Sterben: Wie der Mensch Naturgeschichte schreibt*, Frankfurt a. M.: Suhrkamp.
Kraay, C. M. (1964), "Hoards, Small Change and the Origin of Coinage," *The Journal of Hellenic Studies,* 84: 76–91.
Kurke, L. (1999), *Coins, Bodies, Games, and Gold: The Politics of Meaning in Archaic Greece*, Princeton, NJ: Princeton University Press.

Maddison, A. (2001), *The World Economy: A Millennial Perspective*, Paris: Development Centre of the OECD.
Maddison, A. (2007), *Contours of the World Economy, 1–2030 AD: Essays in Macro-economic History*, Oxford: Oxford University Press.
Magubane, B. (1979), *The Political Economy of Race and Class in South Africa*, New York: Monthly Review Press.
Malinowski, B. (1922), *Argonauts of the Western Pacific. An Account of Native Enterprise and Adventure in the Archipelagoes of Melanesian New Guinea*, London, New York: G. Routledge, E. P. Dutton.
Malinowski, B. (1935), *Coral Gardens and Their Magic: A Study of the Methods of Tilling the Soil and of Agricultural Rites in the Trobriand Islands*, New York: American Book.
Mann, M. (1990), *Geschichte der Macht, Bd. 1: Von den Anfängen bis zur griechischen Antike*, Frankfurt a. M.: Campus.
Martin, P. C. (1985), *Cash: Strategie gegen den Crash*, München: Wirtschaftsverlag Langen-Müller/Herbig.
Martin, P. C. (1988), *Aufwärts ohne Ende: Die neue Theorie des Reichtums*, München: Langen-Müller/Herbig.
Martin, P. C. (1990), *Der Kapitalismus: Ein System, das funktioniert*, Frankfurt a.M.: Ullstein.
Martin, P. C. (2001), "'Gold gab ich für Eisen': Die Gewaltgeschichte des Edelmetalls," Manuscript available online: http://www.goldseiten.de/content/kolumnen/download/pcm-17.pdf (accessed August 25, 2017).
Martin, P. C. (2003), "Macht, der Staat und die Institution des Eigentums," paper presented at the International Symposium on Genuine Money, Good Securities and the Foundations of the Economy: A New Look at Property Rights, Universität Bremen: Institut für Konjunktur- und Strukturforschung (IKSF), November 28–30, 2003.
Martin, P. C. (2008), "Power, the State and the Institution of Property," in O. Steiger (ed.), *Property Economics: Property Rights, Creditor's Money, and the Foundations of the Economy*, 75–105, Marburg: Metropolis.
Marx, Karl (1848), *Manifest der Kommunistischen Partei*, London: Druck von R. Hirschfeld.
McIntosh, M. K. (1988), "Money Lending on the Periphery of London, 1300–1600," *Albion: A Quarterly Journal Concerned with British Studies,* 20 (4): 557–571.
Menger, C. ([1892] 1923), *Grundsätze der Volkswirtschaftslehre*, Wien: Hölder-Pichler-Tempsky.
Minsky, H. P. (1982), *Can "It" Happen Again? Essays on Instability and Finance*, Armonk, NY: M.E. Sharpe.
Minsky, H. P. ([1975] 2008a), *John Maynard Keynes*, New York: McGraw-Hill.
Minsky, H. P. ([1986] 2008b), *Stabilizing an Unstable Economy*, New York: McGraw-Hill.
Mitchell Innes, A. (1913), "What is Money?", *The Banking Law Journal,* 30: 273–296.

Mitchell Innes, A. (1914), "The Credit Theory of Money," *The Banking Law Journal,* 31: 151–168.
Nau, E. (1972), "Über die Anfänge des Münzgeldes," *Der Münzen- und Medaillensammler: Berichte aus allen Gebieten der Münzen- und Medaillenkunde*, 12 (72): 1463–1468.
Nissen, H. J., P. Damerow, and R. K. Englund (1991), *Frühe Schrift und Techniken der Wirtschaftsverwaltung im alten Vorderen Orient: Informationsspeicherung und—verarbeitung vor 5000 Jahren*, Bad Salzdetfurth: Franzbecker.
Ostroy, J. (1987), "Money and General Equilibrium Theory," in J. Eatwell, M. Milgate and P. Newman (eds.), *The New Palgrave: A Dictionary of Economics*, 515b–518a, London: Palgrave Macmillan.
Parguez, A., and M. Seccareccia (2000), "The Credit Theory of Money: The Monetary Circuit Approach," in J. Smithin (ed.), *What is money?*, 101–123, London: Routledge.
Peacock, M. S. (2006), "The Origins of Money in Ancient Greece: The Political Economy of Coinage and Exchange," *Cambridge Journal of Economics*, 30: 637–650.
Picketty, T. (2014), *Capital in the Twenty-First Century*, Cambridge, MA: Harvard University Press.
Polanyi, K. (1957), *Trade and Market in the Early Empires Economies in History and Theory*, Glencoe, IL.: Free Press.
Polanyi, K. (1968), *Primitive, Archaic, and Modern Economies: Essays of Karl Polanyi*, Garden City, NY: Anchor Books.
Polanyi, K. ([1944] 2001), *The Great Transformation: The Political and Economic Origins of Our Time*, Boston: Beacon Press.
Price, M. J. (1983), "Thoughts on the Beginning of Coinage," in C. Brooke et al. (eds.), *Studies in Numismatic Method Presented to Philip Grierson*, 1–10, Cambridge, UK: Cambridge University Press.
Reden, S. von (2002), "Money in the Ancient Economy: A Survey of Recent Research," *Klio,* 84 (1): 141–174.
Redish, A. (1992), "Development of Coinage," in J. Eatwell, M. Milgate, and P. Newman (eds.), *The New Palgrave: A Dictionary of Economics*, vol. 2, 376–378, London: Palgrave Macmillan.
Reinhart, C. M., and K. S. Rogoff (2009), *This Time Is Different: Eight Centuries of Financial Folly*, Princeton, NJ: Princeton University Press.
Rochon, L.-P. (2005), "The Existence of Monetary Profits within the Monetary Circuit," in G. Fontana and R. Realfonzo (eds.), *The Monetary Theory of Production: Tradition and Perspectives*, 125–138, Basingstoke: Palgrave Macmillan.
Roubini, N., and S. Mihm (2010), *Crisis Economics: A Crash Course in the Future of Finance*, New York: Penguin Press.
Sahlins, M. (1972), *Stone Age Economics*, Chicago: Aldine-Atherton.
Samuelson, P. A. (1973), *Economics*, New York: McGraw-Hill.
Schaps, D. M. (2004), *The Invention of Coinage and Monetization of Ancient Greece*, Ann Arbor, MI: University of Michigan Press.

Schmandt-Besserat, D. (1992), *Before Writing: From Counting to Cuneiform*, Austin: University of Texas Press.
Smith, A. ([1776] 1812), *Inquiry into the Nature and Causes of the Wealth of Nations*, London: Murray.
Sombart, W. (1902), *Der moderne Kapitalismus*, Leipzig: Duncker and Humblot.
Stelter, D. (2014), *Die Schulden im 21. Jahrhundert: Was ist drin, was ist dran und was fehlt in Thomas Pikettys „Das Kapital im 21. Jahrhundert"*, Frankfurt a. M.: Frankfurter Allgemeine Buch.
Strobl, T. (2010), *Ohne Schulden läuft nichts: Warum uns Sparsamkeit nicht reicher, sondern ärmer macht*, München: Deutscher Taschenbuch Verlag.
Wagenknecht, S. (2009), *Wahnsinn mit Methode: Finanzcrash und Weltwirtschaft*, Berlin: Das Neue Berlin.
Wallace, R. W. (1987), "The Origin of Electrum Coinage," *American Journal of Archaeology,* 91 (3): 385–397.
Weber, M. (1988), *Gesammelte Aufsätze zur Religionssoziologie*, Tübingen: Mohr.
Wennerlind, C. (2003), "Credit-Money as the Philosopher's Stone: Alchemy and the Coinage Problem in Seventeenth-Century England," *History of Political Economy,* 35: 234–261.
Wray, L. R. (1998), *Understanding Modern Money: The Key to Full Employment and Price Stability*, Cheltenham, UK: Edward Elgar.
Wray, L. R. (2002), "State Money," *International Journal of Political Economy,* 32 (3): 23–40.
Wray, L. R. (2004), "Conclusion: The Credit Money and State Money Approaches," in L. R. Wray (ed.), *Credit and State Theories of Money: The Contributions of A. Mitchell Innes*, 223–263, Cheltenham, UK: Edward Elgar.
Wray, L. R. (2005), "Money," in J. E. King (ed.), *The Elgar Companion to Post Keynesian Economics*, 261–265, Cheltenham, UK: Edward Elgar.
Zarlenga, S. (1999), *Der Mythos vom Geld, die Geschichte der Macht: Vom Tauschhandel zum Euro: Eine Geschichte des Geldes und der Währungen*, Zürich: Conzett.

2.3

Trialogue: Money as Medium or as General Commodity?

Ernst Lohoff, Hanno Pahl, and Jens Schröter

Hanno Pahl

We want to come to an understanding concerning the question "Is money a medium or a commodity that has been set apart from the rest?" It is my impression that this is also a question that has given rise to many misunderstandings and ambiguities. Thanks to the chosen form—a discussion, a trialogue—perhaps we will be able to avoid this and to arrive at more precise clarifications or relationship definitions.

The question cuts across theoretical camps and disciplinary borders and it also has a certain political charge. Depending on how one conceptualizes money, very different views on questions of a possible post-monetary society result. I want first briefly to survey the field. On the one hand, we are dealing with theoretical traditions: Money as commodity relates to the Marxian tradition, to the critique of political economy. Here, of course, we face the difficulty that there have been and are highly different interpretations of this theory and research program. As far as I can see, we all have taken relatively great distance from traditional Marxism. In terms of monetary theory, traditional Marxism does not give us much: If I am right, it is a conventional variant of a labor theory of value of the Ricardian sort, albeit with a particular emphasis of the class dimension **(a)**.

The various "form-critical" and "fetishism-critical" interpretations, which circulate under descriptions like "value critique" (*Krisis*), "monetary value theory" (cf. Heinrich 2001) or the "new reading of Marx" (cf. Backhaus 2011), can be distinguished from this traditional version **(b)**. Without wanting to suppress the differences among them, I would formulate what is common among these latter strands as follows: Money or monetary forms are attributed a key position in modern society or in capitalist economy, whereas in the traditional Marxist interpretation, they are often regarded as a kind of appendage of the (labor-value theoretical, production-centered) so-called

real economy. In the form-critical interpretations, money—or, more exactly, generalized monetary circulation—is attributed a specific logic. It possesses its own dynamic and—in combination with a sphere of production that is also capitalistically organized—generates characteristics like the compulsions to grow and turn a profit, as well as crisis tendencies.

In the case of the conceptualization of money as medium, the situation is also relatively complex. Among other things, this has to do with the vagueness and multidimensionality of the media concept, under which a large number of disparate objects, facts and observational perspectives are subsumed. For the "money as medium" nexus, I would, to start with, distinguish at least three different discursive lines: On the one hand, there is the association of a medium with the idea of neutrality **(c)**. A medium precisely only mediates, but it does not itself possess any structure-forming potential. If one thinks of money in this way as a medium, then one finds oneself in direct proximity to neoclassical economics, in which there is also the idea (which is deeply embedded in the corresponding theoretical structure of equilibrium theory) that money is only a veil and, ultimately, economically neutral.

From the latter, we can distinguish, firstly, the sociological discourse about money as a symbolically-generalized medium of communication (Luhmann [1988] 1994: 230–271; Luhmann refers to Talcott Parsons, who already early on described money as a medium) **(d)**. For a certain time, particularly in the 1980s and 1990s, this was a major topic of discussion, and it was a discourse that, whether explicitly or implicitly, was directed in no small measure against Marxian theory. Thirdly and lastly, we have the newer media theories **(e)**: studies that are often in the tradition of Kittler or that at least critically refer to Kittler. Here, we have, on the one hand, a clear focus on media as decisive "mechanisms" for socio-cultural development. On the other hand, there is hardly any treatment of money coming from these quarters—at least, there is little of which I am aware.

Perhaps we can proceed as follows: Ernst first gives us a couple of bars on the Marxian conception of money as the commodity that has been set apart from other commodities and Jens gives us a couple on the agenda of media theory? So that from the start we can have clearer contours regarding the possible lines of conflict and questions with which we are dealing?

Ernst Lohoff

Money has been a kind of fashionable topic for some time now. Representatives of the most varied scholarly disciplines and theoretical currents have turned to the question of what money is and what social role it plays. This boom in

interest is no accident. On the one hand, it is a reaction to the developments of recent years. Since, at the latest, the outbreak of the 2008 crisis, the fact that the current monetary system is in deep trouble has become palpable. For a society that is completely dependent on this strange "substance," money, this represents a highly explosive and unsettling situation. On the other hand, outsiders who are "alien" to the economics discipline feel called upon to address the issue, because the discipline that, according to the usual academic division of labor, ought to be responsible for this has no ready-made answers to the urgent questions. That its representatives did not foresee current developments is the least of the problems here. A more fundamental deficit is of greater importance. In light of a capitalism that is determined by the financial markets, it is clear that in money we are dealing with an autonomous social power. This is, however, incompatible with the prevailing conception of money in economics. In the case of the neoclassical theory that sets the tone, this is immediately obvious. Neoclassical theory explicitly understands money as a neutral quantity, from which one has to abstract, in order to recognize the essential economic relationships (the "veil of money"). But the situation is not much better also with respect to the competing positions in economic theory. The consensus in economics is to reduce money to the classical monetary functions and to refrain from any definition that goes beyond them as "metaphysical" and of little relevance. The question of what gives money its character as an autonomous social power cannot even be formulated on this basis. It has already been defined away in the monetary-theoretical premises.

If one takes off the traditional Marxian glasses in considering the Marxian critique of political economy and takes its fetishism-critical direction seriously, then the core points about the significance of money read like a counter-program to the dominant technicist-functionalist money concept. As "true power and the sole end" (Marx 1964: 155), money, on the basis of the capitalist mode of production, represents a social absolute for Marx. Per the critique of political economy, money does not only have social influence, "[money] is itself the community, and can tolerate none other standing above it" (Marx 1973: 223).

Someone hearing such formulations for the first time might be reminded of sayings like "money rules the world" or "money spoils one's character." Did Marx thus provide a theoretical foundation to the periodic moaning of ordinary everyday understanding about the power of money? This idea dissipates as soon as one follows how Marx derives the place of money as social absolute. The popular whining treats money as an alien power that has nothing to do with the mode of existence of all as isolated commodity subjects. The critique of political economy deciphers this view as necessary

false consciousness. Money as "the real community" is "the common product of all" (Marx 1973: 225–226; translation modified). By interacting as separated private producers and commodity-owners, people do not only necessarily create something like money, they also create its power over them. In money, commodity subjects encounter "the glittering incarnation" of their "innermost principle of life" (Marx 1976: 230).

In money, the social relationships of people take on an autonomous objective shape. The modern commodity subject can carry around "his bond with society in his pocket" (Marx 1973: 157)—a feat that is unimaginable in every other social formation. Marx coined the term "money fetish" for the transformation of the social bond into a universal social thing. This "money fetish," however, is only the apparent surface and developed form of a much more fundamental madness: "The riddle of the money fetish is therefore the riddle of the commodity fetish, now become visible and dazzling to our eyes" (Marx 1976: 187). In the capitalist mode of production, people leave it to their products to create their social relationship—which is what makes these products into commodities. People's products are thereby already transformed from simple useful goods into "sensate supra-sensate or social things" (Marx [1867] 1983: 637). As commodities, the products of human labor take on a dual character. As a sensate thing, every particular commodity has a specific use-value. But, simultaneously, it also has the "supra-sensate," genuinely social dimension of being a bearer of value. The "magic of money" (Marx 1976: 187) comes from this dual character of the commodity that makes it, at the same time, both a particular use-value and the representative of value in general. "The definition of a product as exchange value thus necessarily implies," namely,

> that exchange value obtains a separate existence, in isolation from the product. The exchange value which is separated from commodities and exists alongside them as itself a commodity, this is—money. In the form of money, all properties of the commodity as exchange value appear as an object distinct from it, as a form of social existence separated from the natural existence of the commodity.
>
> Marx 1973: 145

This derivation of money from the dual character of the commodity is inseparably linked to a definition of the essence of money that is diametrically opposed to the understanding of classical economics. Adam Smith, the founding father of classical political economy, already situated money outside of the world of commodities: outside of actual capitalist wealth. Inasmuch as Marx interprets money in terms of the critique of fetishism and grasps it as the social form of existence of exchange-value that has become its own immediately

social thing, he makes a logical break from this two-world theory. "As the absolute form of existence of exchange-value, in other words the universal commodity" (Marx 1976: 234), money is itself part of the commodity cosmos and the form of presentation of abstract wealth par excellence. In certain functions—for instance, in that of medium of circulation—money, the "independent value shape of commodities" (Marx [1867] 1983: 76), can "be replaced by mere symbols of itself" (Marx 1976: 185). And this is in turn the basis of the idea, which was already widespread in the nineteenth century, that money is itself nothing more than a token or symbol. In *Capital*, however, Marx criticized the symbol theory of money as illusionary. He conceded to its representatives that the interpretation of money as symbol: "did contain the suspicion that the money-form of the thing is external to the thing itself, being simply the form of appearance of human relations hidden behind it." But he only made this concession, in order to reject the contents of the symbol theory, the mystification of money as a non-commodity, in the very next sentence: "In this sense every commodity is a symbol, since, as value, it is only the material shell of the human labor expended on it" (Marx 1976: 185).

For Marx, all commodities represent "social ciphers"—the money-commodity included, of course. On this background, one could, as synonym for "social cipher," also call money a symbol—provided one extends the application of this term also to particular commodities. Moreover, Marx also used the concept of symbol in this way in the *Grundrisse*, in order to designate the exchange-value dimension of every commodity. When money is habitually attributed a symbolic character, this occurs from an entirely different perspective. The usual understanding reserves the concept of symbol for money and treats the opposition between money and commodity as an opposition between symbol of wealth and real tangible content of wealth. But precisely the key monetary-theoretical insight of the critique of political economy is extinguished in such a conception that narrowly treats only money as a symbol. It is not only since René Magritte's famous painting *La trahison des images* (*Ceci n'est pas une pipe*) that we know that a symbol always remains substantively different from the real object it represents. It is for this reason that the picture of a pipe can be neither stuffed nor smoked and painted jam pastries do not fill us up. But the division between money and commodity precisely does not result from the substantive distinction between symbol and object, but is the outcome rather of a completely different logic. The peculiar, genuinely social content that is common to all commodities, viz. of being bearers of exchange-value, makes a separate form of presentation of this content indispensable: "Money is the physical medium into which exchange values are dipped, and in which they obtain the form corresponding to their general character" (Marx 1973: 167).

Against this theoretical background, it is also understandable why Marx so categorically refused the notion that analogies can be made between the position of money in the commodity cosmos and human language:

> To compare money with language is … erroneous. Language does not transform ideas, so that the peculiarity of ideas is dissolved and their social character runs alongside them as a separate entity, like prices alongside commodities. Ideas do not exist separately from language. Ideas which have first to be translated out of their mother tongue into a foreign language in order to circulate, in order to become exchangeable, offer a somewhat better analogy; but the analogy then lies not in language, but in the foreignness of language.
>
> Marx 1973: 162–163

In claiming that ideas are not transformed in language, Marx remained captive to a view that has long since been falsified by linguistic theory. But his core argument is unaffected by this: Money stands for a transformation that is fundamentally different from everything that language accomplishes. In money, a process of reduction and abstraction takes place, for which, even with the best intentions, no parallel is to be found in language. Someone who subsumes lion, tiger and hare under the concept "animal," brings together various living beings under common characteristics and assigns this product of abstraction to a linguistic expression. This kind of abstraction takes place exclusively at the level of thought and speech. It by no means, however, adds a new living being to the fauna. It is, however, precisely such a peculiar real abstraction that comes into the world in the form of money. "It is as if next to and apart from lions, tigers, hares and all other really existing animals …, there existed also *the animal*, the individual incarnation of the whole animal kingdom. Such an individual, which in itself comprises all really existent sorts of the same thing, is a *universal*: like *animal*, *God*, etc." (Marx [1867] 1983: 37).

Of course, the Marxian critique of political economy is not the only imaginable starting point for the search for a non-functionalist understanding of money. Thus, among other things, it would be useful to examine whether findings from the media-theoretical discussion could also help to clarify the social significance of money. At least the chimera of the neutrality of money, which is widespread in economics, is instantly dissolved, when we grasp money as a medium in the sense of modern media theory. In McLuhan's day, that media are not to be considered as neutral mediators, but rather play an essential part in determining social reality and perception, may still have represented a groundbreaking insight. Today, it is virtually a commonplace.

The question has to be posed, however, of what sort of relation a media-theoretical approach has to the concept of money in the critique of political economy. Do the two approaches complement one another or do they start from incompatible premises? Up to now, I have not dealt with the various media-theoretical approaches enough to be able to assess this in any deep way. From the point of view of a Marxist interpretation that is directed toward the fetishism problem, the criterion that decides whether any opening to media-theoretical positions makes sense or not is, however, clear: Is it possible in the media-theoretical system of reference to take into account the inner connection between commodity and money or does such an approach rather reproduce the deficiencies of the classical symbol theory, such as Marx already thematized them?

Jens Schröter

We are debating the question of whether money is to be understood as "commodity that has been set apart from other commodities" or as "medium." Ernst poses the question: "Is it possible in the media-theoretical system of reference to take into account the inner connection between commodity and money or does such an approach rather reproduce the deficiencies of the classical symbol theory, such as Marx already thematized them?" In what follows, I attempt to address this question, although the arguments are preliminary and fragmentary.

1. Introduction: The Unclear Theoretical Situation

Firstly: In standard works in monetary theory (e.g. Ingham 2005: xiii–xvi), the definition of money as a sort of commodity is attributed to both neoclassical and Marxist theory and is opposed to other definitions of money as either (a) based on debt/credit or (b) on the state or (c) as unit of account. The dichotomy that Ernst draws between money as a neutral medium in neoclassical economics ("veil of money") and as "actual community," as autonomous social power (perhaps as the "automatic subject" of society), in Marxian theory presupposes a specific, as Hanno says, form-critical (value-critical) reading of Marxian theory, which hardly plays any role in debates in monetary theory. This is not a criticism. It is, for the moment, merely intended to show how unclear the theoretical situation is.

Secondly: The concept of money as "medium of exchange" appears right from the start in Ingham. Confusingly, however, it does so precisely in the presentation of those approaches in which "money takes its properties from

its status as a commodity" (Ingham 2005: xi). This means that for Ingham, the definition of money as medium of exchange goes together precisely with that of money as commodity—which is indeed supported by Ernst's observation that Marx describes money as a commodity, but also *expressis verbis* as "the physical medium into which exchange values are dipped" (Marx 1973: 167). This means that the opposition between money as commodity (that has been "set apart") and as medium is already withdrawn on the first page of Ingham's *Concepts of Money* and should perhaps not even be drawn. (I will come back to this point.)

Thirdly: In media theory—to the extent that it is at all possible to come to agreement about what is included in it and what is not—there are, as Hanno correctly notes, at least two camps that can be distinguished: on the one hand, the sociological media theories in which money since at least the 1960s has been understood as medium—in Luhmann ([1988] 1994) then as "symbolically generalized medium of communication"—and which are taken up by authors like Norbert Bolz (2008: 90–100); and, on the other—for lack of more precise concepts—all the rest. In McLuhan, there is already in 1964 a somewhat strange chapter on money in his classical media-theoretical book *Understanding Media*; later, Winkler (2004: 36–49), Krämer (2005) and Seitter (2002: 179–196) write a couple of pages on money here and there; Hörisch (1996, 2004, 2011, 2013) even writes a few books on the subject. But one cannot say that money has been a central theme of media theory—especially not in the tradition that Hanno mentions: media archeology of a Kittlerian sort (cf. Rieger 2014). To this extent, a media theory of money remains a desideratum. But—and here I entirely agree with Ernst's skepticism—it remains to be shown what such a theory would be able to demonstrate that others—whether systems-theoretical, value-critical, philosophical, etc.—cannot. (It is, in any case, striking that in Ingham's compendium, there is not a single chapter on media or symbol theories of money.)

2. The Mediality of Value

Marx emphasized that "not an atom of matter enters into the objectivity of commodities as values" (Marx 1976: 138)—to be a commodity, i.e. to have exchange-value, is not a property of the object, but rather a property of the "social relationship," of the "social form." We can take up precisely this point—while criticizing the fuzziness of these concepts—and ask: How is this "form" realized in a medium? How does a commodity confront me? Let us consider, for instance, an apple. "Not an atom of matter" distinguishes an apple in a supermarket from, let us say, its double on a tree. But a price tag is stuck to it, "0.99 euros," and it is strictly forbidden (possibly in contrast to the apple on

the tree) for me simply to take it. Cameras, security guards, tags, signs that threaten punishment, locked doors at night, etc. are all meant to prevent this from happening. I can only take the apple with me, if I hand over the sum of money indicated on the price tag at a designated barrier (the check-out). Three aspects are thus added to the apple: information about its price,[1] knowledge of the rules (laws) concerning what is to be done with the price, and technologies that ensure that the rules are respected.

Firstly: Ernst cites Marx: "In this sense every commodity is a symbol, since, as value, it is only the material shell of the human labor expended on it" (Marx 1976: 185), and he reads this passage as proof that Marx rejected the symbol theory of money as "illusionary." For Marx continues: "But if it is declared that the social characteristics assumed by material objects, or the material characteristics assumed by the social determinations of labor on the basis of a definite mode of production, are mere symbols, then it is also declared, at the same time, that these characteristics are the arbitrary product of human reflection" (Marx 1976: 185–186). I interpret this passage as follows: Marx is right (perhaps without wanting to be so[2]): Every commodity is a symbol. The apple on the tree is not,[3] but as a commodity, it "has" the "value" of "0.99 euros," inasmuch as a sign that is somehow associated with it presents this price. Having an exchange-value means referring to this exchange-value in one way or another (even if it is just a matter of someone saying, "It costs 0.99 euros"). Being a commodity means being connected to a symbol for a certain exchange-value. A commodity is an object with a use-value that has been made into a medium of exchange-value (or was already produced as such). Ernst is thus right when he criticizes the, as he puts it, "habitual" idea (which perhaps also characterizes neoclassical economics) that only money is symbolic and commodities or "goods" are the "real values" (whatever that is supposed to mean[4])—an idea from out of which there also arises the idea that the "unreal," "purely symbolic" financial industry distorts the "real economy" by being superimposed upon it.[5]

[1] Let us abstract here from the question concerning the relation between value and price, which leads directly into the depths of the so-called transformation problem.

[2] But Ernst also alludes to the fact that in the *Grundrisse*, Marx indeed writes explicitly that the "commodity achieves a double existence, not only a natural but also a purely economic existence, in which latter it is a mere symbol, a cipher for a relation of production, a mere symbol for its own value" (Marx 1973: 141).

[3] Christian iconography is to be bracketed here.

[4] One could describe this as a variation of fetishism: one believes that things contain value, instead of its being conventionally, symbolically attributed to them.

[5] Moreover, the allocation of "abstract" to money and "concrete" to commodities also has structurally anti-Semitic implications, to which Postone (1980) refers.

Secondly: But this actually has nothing to do with the fact of being a "mere symbol" or an "arbitrary product of human reflection." As a buyer, it is, namely, difficult for me to change the associated price as I please[6] and even resellers have only a limited scope. This is just as difficult as inventing a new word for objects as one pleases (i.e. if I still want to be understood). Perhaps I would indeed like to alter the price—and I can try to remove a label that displays a lower price from somewhere and to stick it on the apple. But such practices are not only hindered by the material constitution of current price tags (they get ruined), but also by the laws, which are imposed by force, if necessary. This introduces an aspect into the question concerning money that Ernst does not explicitly mention: the state. One does not need to claim that money only comes into being by government fiat (I address the difficult question of the genesis of money below); but, in any case, each current mode of appearance of money is stabilized by the state and, if necessary, revoked.[7] When state power collapses (and no private structures take its place), looting occurs, since price tags, check-out counters and cameras can no longer prevent commodities—which are then no longer commodities—from being taken without being exchanged for money. This is why being the bearer of a symbol does *not* mean being a "mere symbol," since the price is a symbol that is stabilized with extreme violence. Hence, to describe money as a symbolic system does not necessarily mean "mystifying it as a non-commodity," as Ernst claims—it can also mean formulating more precisely what actually connects commodity and money. One always acts as if being a symbol meant being "only" and "merely" a symbol: as if symbols, their orders and their media-political conditions of stability were not *at least a* central structural principle of every possible human reality (see the role of language).

3. Setting Apart

So, what does it mean then to describe money as "general commodity" (Marx 1973: 146) or as the "independent value shape of commodities" (Marx [1867] 1983: 76)? This can only mean that, so to say, the price tag separates from the apple and circulates as its own value. It can do this, because the value is precisely not *in* the apple—"not an atom," as Marx says:

> Every moment, in calculating, accounting etc., that we transform commodities into value symbols, we fix them as mere exchange values, making abstraction from the matter they are composed of and all their

[6] Abstraction is made here from the ritual of haggling—it tends, however, to confirm that as customer, one cannot arbitrarily determine prices.

[7] For a current example, see the abrupt devaluation undertaken by the Indian government (Wikipedia n.d.).

> natural qualities. On paper, in the head, this metamorphosis proceeds by means of mere abstraction; but in the real exchange process a real mediation is required, a means to accomplish this abstraction.
>
> Marx 1973: 142

A "mediation, a means"—a medium: money precisely, in the form of a currency. Symbols cannot exist without material bearers—a basic assumption of media theory. Thus, "value symbols" historically have different and changing material bearers: from gold coins to bitcoins.[8] Or as Marx put it, in media-theoretical terms: "If a symbol is not to be arbitrary, certain conditions are demanded of the material in which it is represented" (Marx 1973: 145). A bill is a materially (almost) worthless object that bears a numerical expression and is medially highly secured against counterfeiting. It can be translated into other media: I can exchange a fifty euro bill against fifty one euro coins or an equivalent amount of gold, which I can then deposit in a bank where the 50 euros are virtually credited to my account, etc. I would like here to take up one of Ernst's formulations: "In certain functions—for instance, in that of means of circulation—money, the 'independent value shape of commodities' (Marx [1867] 1983: 76), can 'be replaced by mere symbols of itself' (Marx 1976: 185)." This sounds as if there were cases in which money would not be a symbol and then, as an exception, could also appear as a symbol. But, as Ernst rightly notes, you cannot eat painted jam pastries—things cannot (as a rule) be replaced by symbols. If money *can* be *replaced* by "mere symbols," then it *must* already have been symbolic before.[9] This also applies for gold and the forms it takes: for example, as coins. The discussion about metallism and nominalism in the history of money (and in Marx) is complex, and I cannot go into it here. I would, however, like to suggest that gold too was never and is not valuable "in itself" and also does not have any intrinsic value due to the fact that it is so difficult to mine, etc.[10] The point is that it combines sufficient scarcity with properties like divisibility, countability and, above all, durability. As Ernst once put it, it is suitable as "bearer of value," because a

[8] Is money the medium or rather the bill that bears the numbers? Further reflection is required here—it might also be possible to describe this using changing medium/form relations in the sense of Luhmann ([1988] 1994: 303).

[9] Does this not also apply for Lohoff and Trenkle's (2012: 152) interesting thesis that a "reassignment of the position of the king in the commodity cosmos" has occurred?

[10] There were also coins made from precious metals that bore no nominal value: hence, whose value correlated to a particular amount of the "valuable" material. But it is evident that the attribution of a particular "value" to a particular amount of material is no less conventional then the stamping of a nominal value on the coin—and, in fact, these relations of attribution were often arbitrarily modified by political decisions (e.g. of the king).

precious metal is chemically relatively stable—the very idea of a currency based on soap bubbles is absurd. Medial stability is evidently not extraneous to money, Gold coins are thus not "intrinsic" money that—as Ernst puts it—"in certain functions, for instance, in that of means of circulation, can 'be replaced by mere symbols of itself'"—but rather they are a type of symbol that can be translated into another. *No money is more intrinsic than any other.* And this is why, as the expansion of capitalist economies required greater quantities of money and the scarcity of gold became a problem, one could at some point also precisely drop gold. Today, the scarcity and stability mechanisms are of a different sort (counterfeiting protection, etc.); and in light of the massive infrastructure in fiber optics, server farms, etc., that is needed for electronic monetary transactions, it is difficult to claim that money has become more "immaterial." Hence, one can conclude that there is no contradiction at all between the description of money as "general commodity" and as "medium"—on the contrary: One can only explain the setting apart of money, by basing it on the symbolic character of commodity and money.

4. Autonomization

Ernst writes: "In money, the social relations of people take on an autonomous objective shape," and he cites Marx: "The individual carries his social power, as well as his bond with society, in his pocket" (Marx 1973: 157). Marx here alludes to the medial ensemble of the wallet, which contains money, but (today) also identity papers, with which every individual is connected economically and politically to economy (*bourgeois*) and state (*citoyen*). The point here is that "social relations" take on an autonomous form. Money is not simply a means to an end, but rather its increase (M–C–M') becomes the main end.

Now, one can ask, to begin with, what in fact "social relations" means. Some sort of medial form must always be used, in order for there to be social relations—even if it is only the language spoken: The latter, however, is also, of course, autonomous vis-à-vis individuals, inasmuch as no one can choose language (and all its structures, metaphorical implications, etc.). One is born into a language (or more than one language). Language always already has an "autonomous objective shape": for example, in the form of dictionaries and textbooks, schools (N.B.: the state!) and exams, with which little people have the "right" way to speak (and write) hammered into them. These formulations are rather close to the core positions of media theory, and they make clear that media are never (or, at any rate, not only) tools of subjects that exist before them—language makes this even clearer than money. To this extent,

Marx's thesis that money is not only a "cleverly devised expedient,"[11] but rather, as Ernst puts it, an "autonomous social power" is very close to the positions of media theory[12] (as, in any case, much in Marx reads like media theory *avant la lettre*).

But Marx—as Ernst indicates—rejected precisely the comparison between language and money (cf. Marx 1973: 162–163). Above all, he emphasizes the following difference. Whereas an abstract concept like "the animal" only exists in thought and speech—and does not really exist alongside particular animals—precisely this is supposed to be the case for the "real abstraction," money: "the animal" is supposed, so to say, really to exist alongside the concrete animals. And this would be a fundamental difference. But it is not. It is an entirely ordinary observation that orders of signs exist parallel to orders of things and mutually relate to one another. I can say: "Please bring me that apple!"—and then (ideally) the apple is brought to me. Thus, although I only used an arbitrary sign for the apple, the real apple is changed (here its position, etc.). Under specific institutional conditions—which, however, are generally relevant for exchange-value too (see above)—the utterance of the sentence "I hereby pronounce you husband and wife!" brings about a change in personal status, with all the associated consequences. Language is not only descriptive and/or abstractive, but also *performative*. It is not always only "mere symbol," which passively represents something real, but it can also intervene as symbol and change the real. Money as "independent value of commodities" means: A state-controlled (and for this reason alone, trustworthy) set of symbols represents value in the form of numbers that are comparable to other such numbers—attached to or associated with objects of use, which are then commodities. "Real abstraction" means, then, that one can also represent

[11] Marx (1970: 51; translation modified): "In other words, on the pretext of examining simple barter, the economists display certain aspects of the contradiction inherent in the commodity as being the direct unity of use value and exchange value. On the other hand, they then consistently cling to barter as adequate form of the exchange process of commodities, which is merely linked to certain technical inconveniences, for which money is a cleverly devised expedient. Seen from this quite superficial point of view, an ingenious English economist has thus rightly maintained that money is merely a material instrument, like a ship or a steam engine, but not an expression of a social relation of production and, consequently, not an economic category." I would maintain that ship and steam engine are also expressions of social relations of production—and not "merely" (yet again this "merely"!) "material instruments"—since material instruments always come from social contexts, are shaped by the latter, and serve to reproduce them (whereby this reproduction can always also fail).

[12] Sybille Krämer (1998: 73) has noted that in the "great diversity of media-related research . . . a common denominator" is emerging: "It is the conviction that media not only serve to transmit messages, but must themselves take part . . . in the content of the messages."

these numbers on diverse media: for example, bills or computer displays. And thus they exist "alongside" the things—which, however, they already exist "beside" or, in other words, independently of them, since I can remove the price tag from the apple, whereby nothing remains in the apple that alludes to its exchange-value. And I can take such a medial record of, say, fifty euros, go into a shop and say, "I'd like this apple," and hold out my 50-euro bill. I get change and the apple handed over to me. Linguistic symbols and monetary symbols change the real object: in performative fashion. Marx explicitly refers to this performative dimension of exchange-value:

> Men do not therefore bring the products of their labor into relation with each other as values because they see these objects merely as the material shells of homogeneous human labor. The reverse is true: by equating their different products [concrete use values—J.S.] to each other in exchange as values, they equate their different kinds of labor [concrete labor—J.S.] as human labor [abstract labor—J.S.]. They do this without being aware of it.
>
> Marx 1976: 166–167; translation modified

The things are not "shells" for human labor and, therefore, value; they contain no value. Value is thus strictly external. It is the act of exchange—i.e. of comparing the symbols on price tags and bills, of "comparison with money" (Marx 1973: 190)—that first creates value as equivalent. This act takes place according to strict rules, which are enforced by the police. As long as these processes occur on a daily basis, exchange-value continues to exist. As soon as, for example, as mentioned above, the political order breaks down and goods are taken from the supermarkets without exchange, exchange-value ceases to exist. It exists in a performative manner. This can undoubtedly be criticized as a "circulation-ideological" reduction of value—but nobody is saying that such processes only occur in exchange on markets. A firm that produces commodities also has somehow to "attach" a price to objects: for example, the price at which it transfers them to retailers; and those that receive the commodities provide monetary symbols, etc. I see no other way to describe this that does not essentialize value in substance-metaphysical fashion and, hence, does indeed make it into an "atom."

5. Conclusions

Finally, I would like to draw some entirely preliminary conclusions and mention a few (they are certainly not all) open questions.

a. Back to Ernst's initial question: "Is it possible in the media-theoretical system of reference to take into account the inner connection between commodity and money or does such an approach rather reproduce the deficiencies of the classical symbol theory, such as Marx already thematized them?" I do not know if the considerations put forward here are convincing or even if they just point in the right direction. What I have tried to do, however, was to give a more concrete and, ultimately, more materialist foundation to the connections that, in my opinion, are rather vaguely described with words like "social form," "relations," etc.: a foundation that can describe how something like value appears and operates at all. The opposition between "medium" and "general commodity" appears thereby to get dissolved. Commodities are always already symbolic and this is why money can also "link" to commodities. It remains, however, an open question how this discussion relates to sociological concepts of money as a "symbolically generalized medium of communication."

b. On the "post-monetary": In any event, a "post-monetary society" cannot be called a "post-medial society." As a rule, it is argued that separate private producers would have again to communicate with each other before production and to come to agreement about what should be produced—in this way, exchange would disappear and hence too money. (This is also a central argument in the "commons" debate.) But this sort of production will entail new processes of coordination, data compression and reduction of complexity on global scales. Otherwise, it will become impracticable. Presumably, one will still carry around one's bond to society in one's pocket: only no longer in the form of money, but rather more in the form of today's smartphones, which, in principle, allow for permanent participation in the common production of society, while simultaneously lowering, thanks to bots, the necessity of permanent reachability, facilitating compressed visualization of current problems, etc. (This scenario becomes at least imaginable by way of trans-local, social networks: cf. Dyer-Witheford 2013). It is not a matter here of "technological solutions for social problems"—but rather of the fact that sociality is always already technological and medial and cannot be otherwise and that talk of "social forms" remains extremely vague, if how they exist in medial terms cannot be specified.

Hanno Pahl

You have both now, decidedly and in great detail, taken positions on the core problematic: namely, to what extent media-theoretical considerations are

able to grasp money as the commodity that is set apart (from other commodities) and whether the distinction between medium and symbol makes sense. I would like to sketch out a few additional points that strike me as worthy of reflection and that relate to the theoretical functions of value theory (1). I would then like to further contextualize our question with respect to something like a media-theoretically informed theory of socio-cultural evolution (2).

(1) I think it is important to recall what explanatory function value theory is supposed to perform. By way of his thesis of a necessary connection between commodities and money, Marx attempts to capture a basic motor activity of capitalist synthesis, with the aim of being able to "derive" conclusions about the development of modern capitalism that are as definitive as possible. This applies not only for the (monetary) labor theory of value, but also for the theoretical format of "value theory" as such: hence, also for "subjective" value theories. The aim is always to relate empirical phenomena (economic dynamics) back to a fundamental principle. This, of course, allows informative (and hence attractive) theories to be constructed. But this is also perhaps a problem.

A few years ago, Frank Beckenbach (2014) posed the question of whether the labor theory of value in Marx (even if it is a monetary labor theory of value) does not occupy a similar position in Marx's theoretical architecture as the auctioneer concept in general equilibrium theory.[13] Since the all-round interdependence of all market and production processes is analytically intractable, Walras used a theoretical figure that transformed the chaotic dynamic of market processes into the much clearer (= analytically and mathematically more manageable) form of a central auction market. There are *short-cuts* of this sort in Marx too: from the (monetary) labor theory of value as foundation to various synthetic concepts that are to be found over the course of the three volumes of *Capital* (for instance, for the assumptions of an intra-industry and cross-industry equalization of profit rates). These too are synthetic figures—*short-cuts*, in a way—which display strong order theoretical or equilibrium theoretical elements. What is at issue are always movements of convergence toward an end state or, at least, strong tendencies.

In particular, in evolutionary economics and complexity economics, efforts are being made nowadays to depict and theoretically conceptualize such aggregation problems without referring to a presupposed theory of

[13] This is, for the moment, only available as the PDF of a presentation, at: http://www.beckenbach.uni-kassel.de/files/pdfs/Vortr%C3%A4ge/FB_Wertformanalyse%20und%20monet%C3%A4re%20Reproduktionstheorie_final.pdf (accessed August 7, 2017).

value (of whatever sort). One is, then, dealing with a whole series of types of states: equilibrium, multiple equilibria, chaos, etc. From a given initial constellation of a (complex, adaptive) system, one can, then, only to a very limited extent derive conclusions about its development, since there are various possible trajectories. And since the economy is a non-linear system, even small changes (at whatever point) can lead to large effects. If one discusses the matter against this background, the question arises of how far the derivation of money from the dual character of the commodity gets us in capturing the developmental tendencies of the capitalist economy. As an analytical point of departure, I think that the Marxian conception is unrivaled. For me, the resulting mode of research is another question. This also concerns the question of something like an "ideal average," if we assume that the core categorial structure is also not something entirely fixed, but rather new forms of autonomization of value emerge in the historical dynamics (for instance, the second-order commodities that Ernst has thematized in recent publications).

Another point is connected to this. In a book that became known, above all, for having shown in a highly convincing manner that the constitution of marginalism and general equilibrium theory is owed to extensive conceptual borrowing from physics, Mirowski (1999) also takes a glance at the Marxian critique of political economy. He there conjectures:

> It would have been too much to expect Marx to have foreseen that the very ontology of the physical world was also experiencing metamorphosis in his lifetime, and yet, it can be argued that the scientific community's transition from substance to field had some influence on his understanding of the labor theory of value, in that there ended up being not one but *two* Marxian labor theories of value: the first rooted in the older substance tradition, the other sporting resemblances to nascent field theories in physics.
>
> Mirowski 1999: 177

It follows that one would have further to discuss the question of the coherence of the Marxian position. The critique of political economy is, after all, a work that remained unfinished—also and precisely with regard to the goal of analytically exposing the basic categorial structure of the capitalist economy.

(2) When we do social analysis on the basis of a form-critical understanding of the critique of political economy, then the question always arises of the scope of monetary theory and the analysis of capitalism. Originally, Marx had in mind the elaboration of a general theory of socio-cultural development (the "materialist conception of history"), in order then, on this basis, to

elaborate a specific theory of the capitalist economy as the presumed center of modern society. As is well known, the former undertaking remained stuck in the state of a program; the latter undertaking grew constantly in terms of its scope, the more Marx pursued the ramifications and the internal complexity of the capitalist system on the categorial level. As a result, the theory of socio-cultural development was not taken up again. Beginning with the late Engels and then, above all, in the Soviet sphere of influence, a sort of proletarian worldview was cobbled together out of bits and pieces taken, above all, from *The German Ideology*. This was meant to serve as a legitimating ideology and as a competing program to bourgeois narratives of progress.

This is, of course, unacceptable. I do think, however, that we need a "higher level" or general theory of socio-cultural development: not because history necessarily has to interest us as an end-in-itself, but for analyzing the dynamics of contemporary capitalism.

In Manfred Faßler (2014), we find an attempt to reconstruct, historically and genetically, "the social" as a specific mode of organization. The focus here is on the development of non-genetic group artifacts (tools, settlements, infrastructure, administrations) (Faßler 2014: 16), whose historical emergence transformed traditional forms of sociality, which can essentially be described as kinship selection. Faßler speaks of a second-order sociality that is set in motion with abstract figures, signs, calculations, symbols, and representation and is reproduced by way of the inheritance of systems of abstraction, plans, writings, sketches, instructions, and that is more and more strongly influencing the modes of socio-cultural development (Faßler 2014: 79). I think that it is useful to discuss money in this context: hence comparatively—both in diachronic and synchronic terms—with other media of this second-order sociality. Such matters have been considered, above all, following Sohn-Rethel (1971), though in an insufficiently complex fashion.

Jens has already noted that money has been hardly addressed in media-theoretical research: at least in the line of research that descends from Kittler. This is perhaps due to Kittler's (political or theoretical-political) stance of taking the greatest possible distance from Marx and from the Frankfurt School. Nonetheless, as a "network of technologies and institutions that allow a given culture to select, store, and process relevant data" (Kittler 1990: 369), his central concept of a "discourse network" (a system of notation) has a certain proximity to form-critical ways of interpreting the critique of political economy. For what Kittler identifies as the blind spots of the humanities and of (Marxist) sociology—viz. the focus of the one on "meaning" and of the other on "labor," whereby the (medial) conditions of possibility of meaning and labor are hidden from view—has a clear proximity to the Marxian

critique of political economy (or, today, of mainstream economics): Marx's criticism, intended for Smith and Ricardo, that, "entirely under the influence of material interests," they overlooked the form-aspects of economic categories in a way that is analogous to how "before *Hegel*, professional logicians … overlooked the formal content of the types of judgments and syllogisms" (Marx [1867] 1983: 32) has at least an entirely analogous structure.

Another example would be Luhmann's (1981) theory of social evolution, which claims that there is a connection between the dominant media of communication and the primary forms of differentiation of corresponding social formations.[14] Speech (orality) correlates with the segmented differentiation regime of archaic societies; the spread of written culture, with the stratified differentiation of earlier advanced civilizations up to feudalism; and book printing, finally, leads in the long-run to the modern—functionally differentiated—society. This may be too schematically constructed, and, of course, matters prove to be more complex, when one brings in concrete historical studies. But it draws our attention to the fact that the development of the capitalist economy does not occur in a vacuum, but rather is surrounded by other processes that interact with the genesis and development of capitalism without everything of relevance being reducible to the economy.

Ernst Lohoff

1. What We Are Arguing About

In my initial contribution, I sketched out the Marxian concept of money as general commodity (that has been set apart from other commodities) on the background of a fetishism-critical interpretation of the critique of political economy; and, in this context, I posed the question of what relation this concept has to attempts to draw on media-theoretical approaches to solve the riddle of money. Jens seems to have interpreted my reflections as if they led to declaring the two approaches to be incompatible. I feel that I have been a bit misunderstood. For me, the question is not so much "whether money is to be understood as 'commodity that has been set apart from other commodities' or as 'medium'" (Jens), but rather how we can concretely conceive of these two definitions. To this extent, my intentions are not so different from those

[14] The thesis that history can be divided into a succession of cultural epochs, which are, in turn, shaped by their respectively dominant media of communication, is already to be found in the work of the Canadian media theorist Harold Innis (1894–1952), who was an important influence on McLuhan. (See Kloock and Spahr 2007: 47.)

of Jens. It is only that I fear that in the case of their combination, the specific content of the Marxian concept of money could get plowed under. It is entirely clear to me that I am here advocating a minority position in the discussion of Marxian theory. This is precisely the background to my fears. Today, the debates are dominated by readings of Marxian theory that render impossible from the outset what I regard as urgently necessary: viz. to make the Marxian critique of political economy useful for the analysis of the current ludicrous monetary system and its glaring contradictions.

My negative comments on symbol-theoretical conceptions in Marx's *Capital* were not, in any case, intended as proof of the impossibility of building a bridge between media theory and the critique of political economy. They are simply meant to make clear the necessity of setting out the preconditions for such an enterprise.

2. Money and Private Labor

On first glance, Marx's position on the symbol theory of money could appear to be internally contradictory. As Roman Rosdolsky (1977) has described in his *The Making of Marx's Capital*, Marx himself repeatedly uses this concept himself in the *Grundrisse*. In his later writings, it is discarded and its use is vehemently attacked. So, did Marx's theoretical position on money fundamentally change after the drafting of the *Grundrisse*? In fact, it did not. Rather, acceptance and rejection of the symbol concept concern different theoretical levels. When money appears as social symbol in the *Grundrisse*, this is because for Marx as critic of fetishism all commodities, without exception, represent social symbols or social ciphers—and hence, of course, so too does the general commodity. On the basis of the Marxian critique of fetishism, being a social symbol and having value objectivity is not a contradiction, but rather one and the same thing. But Marx was completely alone in this. Already at the time, in all other theoretical contexts, ascribing a symbolic character to money meant declaring it to be in essence a non-commodity and denying its value objectivity. Marx took his distance from this view, when he rejected the conception of money as mere symbol. In our time, however, the position that Marx combated is more than ever the consensus. In light of the foregoing, it is absolutely indispensable consistently to hold the front against the idea that money, in contrast to commodities, has a symbolic character.

A very similar problem is posed by the media concept. That money is a social mediator is obvious. It would be absurd to deny its status as medium. The problem is rather that when it is a matter of analyzing the capitalist mode of production, the media concept is almost automatically reserved for money.

But if we take the Marxian analysis of fetishism seriously, money is a derivative intermediary: It is the obvious superficial appearance of more profound formal relationships of mediation in capitalism. It is the "externalized expression of the form of social mediation that constitutes capitalist society" (Postone 1993: 265). It follows that social mediation does not first take place in circulation. The existence of money "expresses" rather "the fact that labor functions as a socially mediating activity" (Postone 1993: 265). Inasmuch as the dominant way of thinking fixates on money as social mediator, it always presupposes as self-evident the relation of mediation on which this is based: viz. the dissolution of society into separate private producers. It was Marx's greatest analytical accomplishment in his critique of political economy to shine a light on this basic relationship of mediation, which is effaced in the dominant consciousness, and to expose it as the specifically capitalist form of social mediation.

3. The Circulative Reduction

Precisely the decisive insight (also for monetary theory) that the transformation of the production of wealth into private labor raises the latter to the status of basic medium of social mediation is almost completely obscured in the reception of Marx's work. At least in the German academic discussion, the tone is currently being set by positions that not only leave the inner connection between value constitution and private labor in the dark, but positively spirit it away. In the nineteenth century, a naturalistic understanding of the substance of value was widespread, and elements of such a view also gained entry into the presentation in *Capital*. The representatives of the "new reading of Marx," in particular, take this as an occasion to throw out the baby with the bathwater. Instead of clearing away this detritus and consistently reconstructing the inner connection between private labor and value substance on the basis of an orientation to the problem of fetishism, the constitution of value is de facto shifted to the sphere of circulation.

The bridge that Jens wants to build between media theory and the Marxian critique of political economy has a structural defect, to the extent that, at least in several passages, it takes over the hegemonic interpretation and its circulative reduction. These include, above all, the following:

> The things are not "shells" for human labor and, therefore, value; they contain no value. Value is thus strictly external: It is the act of exchange—i.e. of comparing the symbols on price labels and bills, of "comparison with money" (Marx 1973: 190)—which first creates value as equivalent. This act takes place according to strict rules, which are enforced by the police.

By equating value constitution and the act of exchange, value and price necessarily merge into one another. The distinction between them becomes artificial. This already points to the fact that the depth dimension of the Marxian analysis vanishes in such an exchange-centered argumentation. But another aspect is more important for our topic. As I already emphasized in my first statement, Marx grasps money as the externalization of the inner contradiction of the commodity, inasmuch as it, on the one hand, represents abstract exchange-value and, on the other, has a particular use-value. The logical point of departure for the constitution of money is "this division of the product of labor into a useful thing and a thing possessing value" (Marx 1976: 166). Whether or not this is the intention, having the constitution of value first begin with exchange means cutting off this dimension of the Marxian concept of money. At the same time, if one declares the act of exchange to be the constitutive act of commodity and value, the connection between commodity and value, on the one hand, and money, on the other, gets inverted with respect to the Marxian view. Money no longer derives from the dual character of the commodity, as in Marx, but rather it is only meeting up with money in the act of exchange that first converts simple things into commodities. Michael Heinrich, currently the most popular representative of the "new reading" of Marx, explicitly defends the idea that the products of private labor first take on the character of commodities in exchange. What Marx considered the basic characteristic of capitalist society and what forms the actual starting point for his analysis, viz. the transformation of the production of wealth into private labor, is thereby effaced. And one has to read Jen's text really generously, in order still to detect the relation to private labor as instance of social mediation in his definition of the commodity: "Being a commodity means being connected to a symbol for a certain exchange-value. A commodity is an object with a use-value that has been made into a medium of exchange-value (or was already produced as such)." At any rate, as compared to Marx, the connection has become extremely loose. Marx, namely, used the following apodictic formulation: "Only the products of mutually independent acts of private labor, performed in isolation, confront each other as commodities" (Marx 1976: 132; translation modified). He thus derived the character of the product as commodity directly from the transformation of the production of wealth into private labor.

4. Thought Abstraction and Real Abstraction

This logical status of money as the necessarily objectified form of appearance of basic social mediation via private labor and the products of private labor does not negate its own medial character, but it does make money a medium

sui generis. Above all, money exhibits a peculiarity to which, as far as I know, there is no parallel among other media. For the money commodity as derivative medium to confront the cosmos of many particular commodities as "the absolute existence of exchange-value" (Marx [1857–1858] 1953: 919) and general commodity, it must itself represent capitalist wealth. It must either, like gold, stand for past dead labor or, like today's artificial money commodity, the titles to ownership of the central banks, as well as the titles to ownership that are negotiated between private actors on the money and capital markets, represent future value production. The general commodity thus has the same content as that which it mediates. Marx essentially sets out from this substantive equivalence, when he grasps money as real abstraction, and, in order to elucidate the comparison with the animal kingdom that I have cited, notes: "It is as if next to and apart from lions, tigers, hares and all other really existing animals . . ., there existed also *the animal*, the individual incarnation of the whole animal kingdom. Such an individual, which in itself comprises all really existent sorts of the same thing, is a *universal*: like *animal*, *God*, etc." (Marx [1867] 1983: 37).

Jens does not consider the inner connection between private labor and the commodity character of human products. Thus the equivalence between commodity and money appears as a process of abstraction that is, as it were, externally imposed on products of labor in exchange. The substantive identity between the money commodity, as the general representative of the system of private labor, and particular commodities, which each represent a particular form of private labor, is thus made invisible. This is why Jens rejects the view that there is a fundamental difference between the money medium and other media, such as language, for instance. Jen first summarizes the Marxian argument:

> Whereas an abstract concept like "the animal" only exists in thought and speech—and does not really exist alongside particular animals—precisely this is supposed to be the case for the "real abstraction," money: "the animal" is supposed, so to say, really to exist alongside the concrete animals. And this would be a fundamental difference. But it is not. It is an entirely ordinary observation that orders of signs exist parallel to orders of things and mutually relate to one another. I can say: "Please bring me that apple!"—and then (ideally) the apple is brought to me. Thus, although I only used an arbitrary sign for the apple, the real apple is changed (here its position, etc.).

A few lines further on, Jens draws his conclusion: "Language is not only descriptive and/or abstractive, but also performative. It is not always only

'mere symbol,' which passively represents something real, but it can also intervene as symbol and change the real." There is no question about it: Jen's assessment of language is entirely correct. Language undoubtedly has a performative character and, like all media, it affects that which it mediates. But Marx's core argument is not at all that language only passively reflects reality. What is at issue for him in the distinction between thought abstraction and real abstraction is rather the specific character of the process of abstraction for which money stands. Even if language changes extra-linguistic reality, it always remains a system of signs in a reality that is not only linguistic. Even if my use of the word "apple" can bring a real apple into my possession, the word as such never becomes a real apple. It is otherwise in the case of money. In the general commodity, the exchange-value of particular commodities takes on an independent absolute form of existence.

5. The General Commodity and Its Symbols and Substitutes

In principle, my intentions and Jens's are the same. Both of us want to unite the Marxian concept of money as the general commodity that has been set apart from other commodities and the idea of money as medium. Despite this common goal, for the moment we cannot find a rapprochement. This is because we are each operating with different concepts of the categories of commodity and value. This is not only evident in the case of particular commodities. As concerns money, what is most striking is that empirically as well we do not have the same thing in mind when we speak of the general commodity. When I grasp money as the general commodity that has been set apart from the rest, I mean neither cash nor the private credit money that serves as means of payment and circulation in day-to-day business transactions. I insist on the fact that every monetary system is based on a money commodity, which provides backing for the legal means of payment. The actual general commodity that has been set apart from other commodities is not to be found in the wallets of private monetary subjects, but rather in the vaults and the books of central banks. The possessions of the central banks constitute the foundation of the monetary system. Precious metals stored in the vaults of the central banks occupied this key position in the era of gold-backing. Today, commodities of an entirely different sort have replaced monetary gold as the general commodity: namely, the tradable monetary claims that are amassed in the central banks when credit is extended to commercial banks. Gold as general commodity represents past value production, past general private labor; the claims of the central banks vis-à-vis commercial banks represent private labor that is still to be performed, anticipated value.

In light of this limitation of the concept of general commodity to the foundation of the monetary system, Jens counters with the verdict: "No money is more intrinsic than any other." Whether bitcoin, a hundred euro bill or debit card. Everything that people use as means of exchange and payment is general commodity and symbol. This view may well have its logic, if one locates the constitution of commodities and value in the act of exchange. It is also compatible with the common practice in economics of defining money by way of its functions. But for those who, following Marx, conceive of the general commodity as a part of capitalist wealth that has been set apart from other commodities—as a part of society's total production of value or anticipated production of value that has been set apart—all cats are precisely not gray. The monetary system is differentiated. From this point of view, the hundred euro bill is not a commodity at all, but rather, as a worthless piece of paper, it merely refers to the general commodity. As the symbolic proxy of the capitalist wealth that is represented by the general commodity, its own social validity is derived from the latter. Banknotes of a central bank that, as "equivalent" for the issued central bank money, only had claims in the books that need to be written off would not be worth the paper on which they are printed. Private credit money, in turn—for instance, in the form of a debit card—does have the character of a commodity. It represents a monetary claim of the account owner vis-à-vis his or her bank, which can be transferred to others. As a claim in legal means of payment vis-à-vis a private actor, it is itself, however, a particular commodity and by no means the general commodity.

The assertion that money is a symbol—in contrast to supposedly genuine capitalist wealth, viz. commodities—is often supported by the argument that money is the result of government fiat. Jens too talks about the relationship between the state and money. Despite his wanting to think about the character of money as general commodity with a symbolic character, it is hard to distinguish his train of thought from this common interpretative model. Jens writes that, "each current mode of appearance of money as currency is stabilized by the state and, if necessary, revoked." And he continues: "When state power collapses . . ., looting occurs, since price tags, check-out counters and cameras can no longer prevent commodities—which are then no longer commodities—from being taken without being exchanged for money. This is why being the bearer of a symbol does not mean being a 'mere symbol,' since the price is a symbol that is stabilized with extreme violence." It is undoubtedly correct that the state imposes the bourgeois property order with its legal code and its monopoly of violence; but this is something other than securing the social validity of money and "monetary stability" (i.e. the stability of money's value). As concerns the former, laws and the billy club are certainly proven

means; but they quickly run up against their limits in the case of the latter. In the early modern period, when gold and silver coins still served as means of circulation, the persistently hard-up states were happy to use their right of coinage to create income by reducing the real metal content of their coins below the nominal content. But the outcome of this debasement of the coinage was always that the exchange-value of the coins fell to the real metal content. When, in the First World War, the warring parties financed their military expenditures by printing money, the result was a similar phenomenon—one need only think of the hyperinflation in vanquished Germany that reached its highpoint and culmination in 1923. In the meantime, the modern state has developed a far more sophisticated set of instruments for influencing the monetary system. In the form of central banks, an abstract generality proper to the monetary system has taken shape. But it by no means creates money and its validity as *deus ex machina*. Rather, its steering potential consists in its ability to influence the scope of the formation of "fictive capital" (Marx 1981: 525ff.) on the money and capital markets. This occurs, on the one hand, directly by way of the extension of credit to commercial banks and also indirectly, inasmuch as it either inhibits or promotes lending in the private economy by establishing base interest rates and minimum reserves. But this all has nothing to do with creating symbols; it has rather to do with capital market commodities and their specific laws of movement.

Jens Schröter

I would like to thank Ernst for his helpful clarifications—and I also think that we are not so far apart. I see the misunderstanding as lying elsewhere, however. His comments would deserve a more detailed commentary than I can provide here. I can merely go into a few points by way of example.

Circulative reduction: For outsiders, this charge that the different factions (e.g. value criticism, the new reading of Marx) repeatedly raise against one another is not always understandable. Ernst writes: "Jens does not consider the inner connection between private labor and the commodity character of human products. Thus the equivalence between commodity and money appears as a process of abstraction that is, as it were, externally imposed on products of labor in exchange." As against this, I explicitly wrote:

> This can undoubtedly be criticized as a "circulation-ideological" reduction of value—but nobody is saying that such processes only occur in exchange on markets. A firm that produces commodities also has somehow to "attach" a price to objects: for example, the price at which it

> transfers them to retailers; and those that receive the commodities provide monetary symbols, etc. I see no other way to describe this that does not essentialize value in substance-metaphysical fashion and, hence, does indeed make it into an "atom."[15]

Needless to say, goods are produced (in capitalism) as commodities for circulation; but they can also only be realized as commodities in circulation. The question was in no way *where* the commodity character emerges (the connection between production and circulation was rather presupposed), but rather *how* the commodity character is inscribed in objects, how it is medially operative and hence how it is connected to the money medium. On the one hand—which Ernst, unfortunately, does not thematize—Marx says that "not an atom of matter enters into the objectivity of commodities as values" (Marx 1976: 138) and, on the other (if, in part, critically), that commodities themselves can be understood as symbols—which Ernst also affirms: "Being a social symbol and having value objectivity is not a contradiction, but rather one and the same thing." Exactly—and that is why I am interested in the connection between the commodity "symbol" and the money "symbol." It is not the case, as Ernst claims, that I understand money as "a symbol in contrast to supposedly genuine capitalist wealth." Money and commodities are both symbolic, and the question which is more "genuine" simply makes no sense. My actual knowledge interest is, so to say, materialist. For me, it is not enough to say that a "social relation" gives rise to commodities with exchange-value and money as the independent expression of the latter. Where and how is the value? How is it operatively created and performatively stabilized? Constantly to say that capitalism is "real metaphysics" and value is not empirical sounds like an idealist metaphysics—and this is one of the main reasons that is difficult to make connections to value criticism: for instance, in media theory.

Furthermore, Ernst notes that "It would be absurd to deny" money "its status as medium": "The problem is rather that when it is a matter of analyzing the capitalist mode of production, the media concept is almost automatically reserved for money. But if we take the Marxian analysis of fetishism seriously, money is a derivative intermediary: It is the obvious superficial appearance of more profound formal relationships of mediation in capitalism." My criticism that value criticism has not yet provided a materialist analysis of mediation is manifest here in a lack of terminological clarity: There is a "medium," which is a "derivative intermediary" of "more profound formal relationships of mediation in capitalism." (Only the "mere symbol" is still missing.) How does

[15] I admit that it would have been better here to speak of "value" rather than price.

a medium relate to mediation? How does "derivative" mediation relate to (apparently) actual mediation? How does mediation relate to form? And hence how does medium relate to form? (A certain proximity to Luhmann's [(1988) 1994: 303] use of medium and form comes to mind here.) If, as I suggest, we grasp both money *and* commodities as medial bearers of symbols, then the question automatically arises of what these symbols describe as their reference: and that reference is value, which leads in turn to labor. Thus, we can begin to understand the connection between commodities, money, value, and labor as a symbolic process and to free ourselves from an idealist metaphysics, which postulates a non-localizable (since it is not "in" commodities and money), as it were, Platonic value. Then we can even ask how value and the "relations of mediation on which it is based" are stabilized and reproduced via what forms of medial technologies—and how this can be changed, since social "relations" are always socio-technical, as Marx was well aware. From this fundamental perspective, two aspects follow, which I can only briefly indicate.

Medium sui generis: Obviously, the next question that imposes itself is whether money as medium is different from other media. To start with: I agree with Ernst's idea of flagging money as a "medium *sui generis*": a sort of particular and distinguished medium. But here too, a precise materialist investigation would have to be undertaken to establish how this centrality is historically produced, medially stabilized and extended (e.g. by way of more and more objects and processes being transformed in such a way that they become exchangeable into money and hence become commodities: today, for instance, in "social media" of communication). Ernst argues, however, that the peculiar character of money lies in the fact that money is a different type of medium and has a different type of ontology (which raises the questions of whether it is, then, a medium at all): "Even if my use of the word 'apple' can bring a real apple into my possession, the word as such never becomes a real apple. It is otherwise in the case of money. In the general commodity, the exchange-value of particular commodities takes on an independent absolute form of existence." I do not understand this argument: Money in the form of a bill that is in front of me also never "becomes" an apple. It can rather "bring a real apple into my possession [!]," just like, as Ernst himself concedes, a word—e.g. a request or a command—can also do this (and in both case, this only applies if apples are available).

Different forms of money: My thesis that no money is "more intrinsically money" than any other refers, in the first place, to the fact that all money is a medium that bears a symbol referring to "value." This applies also to the "actual money" or the "actual money commodity" discovered by Ernst. He writes: "It must either, like gold, stand for past dead labor or, like today's

artificial money commodity, the titles to ownership of the central banks, as well as the titles to ownership that are negotiated between private actors on the money and capital markets, represent future value production." And further: "The actual general commodity that has been set apart is rather to be found in the vaults and the books of central banks. It is comprised of the possessions of the central banks, which constitute the foundation of the monetary system. Precious metals stored in the vaults of the central banks occupied this key position in the era of gold-backing." It could not be said more clearly that the "actual money commodity" is also medial in nature. It "stands for something" or "represents something"—even at times, as Ernst rightly underscores, for something that is completely fictitious: "future value production." And fictitiousness is something genuinely medial: There are no fictive entities like "future value production" outside of symbolic processes. The "actual money commodity" is also to be found in "books." To this extent, there is no difference between "actual" money and its "mere symbol." Both are symbols. In my opinion, this has nothing to do with the criticism, to which I already responded above, concerning whether one "locates the constitution of commodities and value in the act of exchange." In another text, Ernst (Lohoff 2013: 49) describes "the general commodity, to which issued paper money owes its backing and from which its role as money(-proxy) is derived." The general commodity "backs the token money issued by the central bank" (Lohoff 2013: 50). The most important function of the money commodity thus appears to consist in providing backing. In the past, gold and, now, the future constitute the ultimate reference of the monetary system. And what reference symbols have, how their meaning gets stabilized, is a genuine semiotic and media-theoretical question. Formulated in this way, we can again ask: How is the reference of "value" stabilized or destabilized? What role is played here by the state, etc. .? How does this reference fall into crisis? If commodity, value and the independent expression of the latter in money are understood as symbolic processes, then we can also ask about the possibility of alternative systems of signs.

Ernst Lohoff

In his contribution, Hanno cites Philip Mirowski (1999: 177) and his suggestion that there are "not one but *two* Marxian labor theories of value," and he adds: "It follows that one would have again to discuss the question of the coherence of the Marxian position." I can only join him in calling for such a discussion. Precisely as concerns the foundation of his critique of political economy, Marx left behind a theory that is anything but self-contained and

free of contradiction. This is all the more the case, inasmuch as a deeper fissure runs through the Marxian value concept than that which Mirowski took as the occasion to speak of "two Marxian theories of value." Even if the value concept of classical political economy and the physiological concept of labor, which emerged decades later and borrowed from the physical conception of "energy expenditure," are not identical, they are related as variants of a trans-historical and positive concept of labor value. By contrast, the Marxian critique of fetishism involves a value concept that is diametrically opposed to the positive labor theory of value. This is where the real divide in the Marxian understanding of the value category is to be sought. To the extent that Marx reverts to the standpoint of a positive labor theory of value, his position fits into the theoretical debates of his time; on the other hand, his fetishism-analytical value concept, such as forms the basis, above all, for the presentation in *Capital*, represents an erratic block in the scientific landscape—and it does so up to today.

For Marx philology, it would be a useful endeavor to depict in detail how the positive labor theory of value and the radical critique of the value-form blend together and intersect in the critical economic writings. This much, however, is clear even without detailed investigation: Precisely as concerns the understanding of the value category on which the critique of political economy is based, there exist in fact something like "two Marxes."

The value-critical approach that I advocate does not even try to bridge over this contradiction, in order to salvage the unity of Marxian theory. Instead, it abides by the following paradigm. A Marxism that adheres to a positive, naturalizing labor theory of value, participates in the basic errors of classical political economy and its heir, mainstream economics, and is, in the last analysis, condemned to run into the same dead-ends as the latter. In the Marxian critique of fetishism, on the other hand, is to be found the key to the solution of the economic riddles that have brought about the failure of the dominant economic theory. Only on the basis of a concept of value that is consistently oriented to the critique of fetishism, and hence has been freed from the eggshells of a positive, naturalizing conception of labor value, is it possible further to develop the critique of political economy and to make it useful for the analysis of contemporary capitalism?

Understood in this way, the theorem of the "two Marxes" has far-reaching implications for the question Hanno has raised concerning the theoretical status of the Marxian value concept. Hanno flirts with Frank Beckenbach's thesis that "the labor theory of value in Marx" occupies "a similar position in Marx's theoretical architecture as the auctioneer concept in general equilibrium theory." As concerns the Marx who is pulled along in the wake of the positive labor theory of value, this assessment is surely justified. But the

thesis that Marx's "labor theory of value" is one of the "synthetic figures" that "display strong order theoretical or equilibrium theoretical elements" does not do justice to the "other Marx." Reformulated in terms of the critique of fetishism, the Marxian concept of value does not only substantively represent an erratic block in the scientific landscape, it is also methodologically conceived in a way for which it is difficult to find parallels in the categorial understanding of the scientific enterprise.

Massive problems of compatibility arise, above all, from a peculiarity of Marxian category formation. In the prevailing understanding of science, abstract concepts only ever serve as a means for assimilating reality in thought. The theorist tries to apply thought abstractions that are as appropriate as possible to the complex reality, such as to provide order to the latter in his or her mind. As against this, the Marxian critique of fetishism grasps value as, above all, a process of abstraction that takes place within the social reality. In capitalism, society is subjected to an abstract social form of relationship, and the category of value allows us logically to grasp this subjection. In the usual understanding of science, abstraction processes take place exclusively in the human brain. Abstract categories are merely an instrument with the help of which the theorist explains reality.

By contrast, the critique of fetishism sees an objective process of abstraction at work, which structures capitalist reality, and it interprets value as real abstraction. The intellectual accomplishment of the theorist consists in deciphering this real process of abstraction.

As is well known, Marx did not claim to be opposing a new political economy to classical political economy, but rather to be formulating a critique of political economy. This self-understanding points directly to the peculiar logical status of categories, such as that of value in the critique of fetishism. Marx by no means discards traditional value theories, in order to replace them with a new, positive value theory; rather, "value" as object of knowledge is simultaneously itself the object of criticism. For Marx, value is not a neutral-analytical concept, but rather itself, as real abstraction, a crazy reality, which can only be theoretically penetrated from a negating standpoint. The little word "critique" means here something more than taking an ethically motivated decision against the prevailing form of socialization; it refers to the inner contradictoriness and, in the final analysis, untenability of value as real category. This leads, however, to a second fundamental feature of the value concept, per the fetishism critique, that makes it stand out from the crowd of value theories: Value is also a category *sui generis* as a result of its thoroughly historical character.

As a rule, the usual value theories have value emerging from the social division of labor per se and, consequently, treat it as a category that is suitable

for every sort of economy based on the division of labor. Marx, by contrast, emphasized that commodities only represent value as the form of presentation of separate acts of private labor. With its tendency to apotheosize labor, traditional Marxism has, as a rule, interpreted these remarks as if Marx's point were to celebrate labor as the only source of social wealth and hence too of value. In so doing, Marxism has reproduced the usual conception of value as a trans-historical category. But the Marx of the critique of fetishism is thus erased and the main point of his argumentation is stood on its head. By deriving the constitution of value from private labor, Marx tied the formation of value to a specific social form of productive activity that first emerged along with capitalism. If the foundation of value, viz. the dissolution of society into separate private producers, is to be grasped as a historically specific phenomenon, then it follows that this is also the case for the category of value itself.

Value is thus, in the first place, something deeply historical, as the category is to be reserved for the capitalist mode of production. Its historicity, however, also has a second dimension, which is at least as important for our questions, if not more so. Even on the basis of the capitalist mode of production, value has something like an internal history. Whereas the value concept has a static character in other value theories, the critique of political economy grasps value as a dynamic category, inasmuch as its relation to material wealth evolves in a very particular direction. On the basis of the capitalist mode of production, whether and to what extent material production can be represented as value is subject to a particular historical trend of development.

This concerns, in the first place, the level of individual commodities: As a result of the development of productivity, the labor-time necessary for the production of every individual commodity is constantly falling in all existing branches of social production. Hence, a ton of steel or a hundred pounds of potatoes represent a smaller and smaller mass of value. Or viewed the other way around: The same value has to be represented in larger and larger quantities of use-values. But a clear tendency is also observable on the level of society as a whole. The increasing socialization of material production alters the composition of the aggregate social labor to the detriment of separate private labor and thus ultimately undermines the transformation of material wealth into value-wealth. As sketched out by Marx in the "Fragment on Machines" in the *Grundrisse*, this process reaches a critical threshold when the application of science replaces isolated individual labor as the main force of production.

Precisely as concerns the historicity of the value category, the presentation in the *Grundrisse* can certainly also serve as proof of the existence of "two Marxes." On the one hand, the founder of the critique of political economy

here thematizes the internal history of value particularly clearly and shows that the increasingly scientific character of production can ultimately only lead to one thing: "With that, production based on exchange value breaks down" (Marx 1973: 705). On the other hand, in his treatment of the prehistory of capitalism, Marx reverts to the usual standpoint of other value theories and ascribes something like a pre-capitalist existence to value.

Hanno's reflections on a "higher-level or general theory of socio-cultural development" have also to be seen on this background. Hanno refers to the changes in the orientation of Marx's critical economic writings, and he writes: "Originally, Marx had in mind the elaboration of a general theory of socio-cultural development (the 'materialist conception of history'), in order then, on the basis of it, to elaborate a specific theory of the capitalist economy as the presumed center of modern society." Hanno regrets that this first part was not further developed, but rather remained just a project, and that in *Capital*, Marx limited himself to elaborating "a specific theory of the capitalist economy." There was, however, a good reason for the shift away from the original plan and the narrow focus on the capitalist mode of production. Since, while working on *Capital*, Marx recognized value as a category that is proper only to the capitalist mode of production, he would have had to have founded a new type of general theory of socio-cultural development: a general theory that is not based on mystifying value as a trans-historical category. As little as there is to be said, in principle, against the desire to have a higher-level theory of socio-cultural development, it should not result in an elimination of Marx's critique of fetishism. Otherwise, "less is more" applies.

Hanno Pahl

It is not easy to provide a concise summary of our trialogue. What should have become clear is that it seems, in principle, to be fruitful to relate the value-critical or form-critical interpretations of Marxian theory to contemporary research questions in media theory and to see what perspectives for further reflection result. But the difficulties with which one could be confronted in doing so will also have been made plain. Ernst rightly notes that Marxian value theory represents an "erratic block in the scientific landscape" and that its methodological peculiarities give rise to "massive compatibility problems" in all attempts to bring it into relation with other, newer theoretical formats. I think we largely agree that a dual strategy is required here: The genuine insights of the Marxian critique, its specific problematic, should not be undermined; otherwise, the whole procedure would prove to be pointless. At the same time, however, the often hermetic

character of "Marxological" discourse should be pried open a bit, since ultimately it leads to self-isolation and to the apriori rejection of all possible extensions and renovations.

With regard to our initial question on "money as medium or as commodity (set apart from the rest)?," Jens's inputs, in particular, have identified some possibilities. We can perhaps bring together these intentions into the fundamental question of whether we can go beyond the "semantics of mediation" deployed by Marx, in order to present the insights that it contains differently and, perhaps, more precisely (and to encourage debate about them). Jens has, for instance, formulated it as a program to ascertain, micrologically and also empirically, "*how* the commodity character is inscribed in objects, how it is medially operative and hence how it is connected to the money medium." In terms of theoretical architecture, for me the question, above all, remains of how, within the framework of a "media-materialist" perspective, we need to deal with the inherited conceptual network of an idealist metaphysics. Marx himself already re-functionalized the latter: above all, in order to give expression to his ideas with regard to real abstractions. We need to show what additional insights a media-materialist perspective can bring to light here: for example, concerning the further structural development of capitalism and hence with respect to the changing forms of value-objectification ("what functions when and how as the money commodity?").

References

Backhaus, Hans-Georg (2011), *Dialektik der Wertform: Untersuchungen zur marxschen Ökonomiekritik,* 2nd edition, Freiburg im Breisgau: ça ira.

Beckenbach, Frank (2014), "Wertformanalyse und monetäre Reproduktionstheorie: Kritische Weiterentwicklung des Marxschen Ansatzes." Available online: http://www.beckenbach.uni-kassel.de/files/pdfs/Vortr%C3%A4ge/FB_Wertformanalyse%20und%20monet%C3%A4re%20Reproduktionstheorie_final.pdf (accessed August 7, 2017).

Bolz, Norbert (2008), *Am Ende der Gutenberg-Galaxis: Die neuen Kommunikationsverhältnisse*, Munich: Fink.

Dyer-Witheford, Nick (2013), "Red Plenty Platforms," *Culture Machine*, 14: 1–27.

Faßler, Manfred (2014), *Das Soziale: Entstehung und Zukunft menschlicher Selbstorganisation*, Paderborn: Fink.

Heinrich, Michael (2001), "Monetäre Werttheorie: Geld und Krise bei Marx," *Prokla*, 123: 151–172.

Hörisch, Jochen (1996), *Kopf oder Zahl: Die Poesie des Geldes*, Frankfurt am Main: Suhrkamp.

Hörisch, Jochen (2004), *Gott, Geld, Medien: Studien zu den Medien, die die Welt im Innersten zusammenhalten*, Frankfurt am Main: Suhrkamp.
Hörisch, Jochen (2011), *Tauschen, sprechen, begehren: Eine Kritik der unreinen Vernunft*, Munich: Fink.
Hörisch, Jochen (2013), *Man muss dran glauben: Die Theologie der Märkte,* Munich: Fink.
Ingham, Geoffrey (Hrsg.) (2005), *Concepts of Money: Interdisciplinary Perspectives from Economics, Sociology and Political Science*, Cheltenham, UK: Edward Elgar.
Kittler, Friedrich (1990), *Discourse Networks 1800/1900*, trans. Michael Metteer with Chris Cullens, Stanford, CA: Stanford University Press.
Kloock, Daniela, and Spahr, Angela (2007), *Medientheorien: Eine Einführung*, 3rd edition, Munich: Fink.
Krämer, Sybille (1998), "Das Medium als Spur und als Apparat," in Sybille Krämer (ed.), *Medien Computer Realität: Wirklichkeitsvorstellungen und Neue Medien*, 73–94, Frankfurt am Main: Suhrkamp.
Krämer, Sybille (2005), "Das Geld und die Null: Die Quantifizierung und die Visualisierung des Unsichtbaren in Kulturtechniken der frühen Neuzeit," in Klaus W. Hempfer (ed.), *Macht Wissen Wahrheit*, 79–100, Freiburg: Rombach.
Lohoff, Ernst (2013), "Auf Selbstzerstörung programmiert," *Krisis*, 2. Available online: http://www.krisis.org/wp-content/data/krisis_zwei2013.pdf (accessed August 7, 2017).
Lohoff, Ernst, and Trenkle, Norbert (2012), *Die große Entwertung: Warum Spekulation und Staatsverschuldung nicht die Ursache der Krise sind*, Münster: Unrast.
Luhmann, Niklas (1981), "Die Unwahrscheinlichkeit der Kommunikation," in Niklas Luhmann, *Soziologische Aufklärung 3: Soziales System, Gesellschaft, Organisation*, 25–34, Opladen: Westdeutscher Verlag.
Luhmann, Niklas ([1988] 1994), *Die Wirtschaft der Gesellschaft*, Frankfurt am Main: Suhrkamp.
Marx, Karl ([1857–1858] 1953), *Grundrisse der Kritik der politischen Ökonomie* (Rohentwurf 1857–1858, Anhang 1850–1859), Frankfurt: Europäische Verlagsanstalt.
Marx, Karl (1964), *Economic and Philosophic Manuscripts of 1844*, trans. Martin Mulligan, New York: International.
Marx, Karl (1970), *A Contribution to the Critique of Political Economy*, trans. S. W. Ryazanskaya, ed. Maurice Dobb, New York: International Publishers.
Marx, Karl (1973), *Grundrisse: Foundations of the Critique of Political Economy*, trans. Martin Nicolaus, London: Penguin/New Left Books.
Marx, Karl (1976). *Capital: A Critique of Political Economy*, vol. 1, trans. Ben Fowkes, London: Penguin/New Left Books.
Marx, Karl (1981), *Capital: A Critique of Political Economy*, vol. 3, trans. David Fernbach, London: Penguin/New Left Books.

Marx, Karl ([1867] 1983), *Das Kapital: Kritik der politischen Ökonomie*, Bd. 1, in Karl Marx and Friedrich Engels, *Gesamtausgabe*, *Zweite Abteilung: Das Kapital und Vorarbeiten*, Bd. 5, 1st edition, Berlin: Dietz.

Mirowski, Philip (1999), *More Heat than Light: Economics as Social Physics, Physics as Nature's Economics*, Cambridge: Cambridge University Press.

Postone, Moishe (1980), "Anti-Semitism and National Socialism," *New German Critique*, 19: 97–115.

Postone, Moishe (1993), *Time, Labor, and Social Domination: A Reinterpretation of Marx's Critical Theory*, Cambridge: Cambridge University Press.

Rieger, Stefan (2014), "Medienarchäologie," in Jens Schröter (ed.), *Handbuch Medienwissenschaft*, 137–44, Stuttgart: Metzler.

Rosdolsky, Roman (1977), *The Making of Marx's Capital*, trans. Pete Burgess, London: Pluto Press.

Seitter, Walter (2002), *Physik der Medien: Materialien—Apparate—Präsentierungen*, Weimar: Verlag und Datenbank für Geisteswissenschaften.

Sohn-Rethels, Alfred (1971), *Warenform und Denkform. Aufsätze*, Frankfurt am Main.: Europäische Verlagsanstalt.

Wikipedia (n.d.), "2016 Indian Banknote Demonetisation," *Wikipedia*. Available online: https://en.wikipedia.org/wiki/Indian_500_and_1000_rupee_currency_demonetisation (accessed August 7, 2017).

Winkler, Hartmut (2004), *Diskursökonomie: Versuch über die innere Ökonomie der Medien*, Frankfurt am Main: Suhrkamp.

2.4

On the Possibility of a Society After Money: Evolutionary Political Economy, Economic Subjectivity and Planetary-scale Computation[1]

Ernest Aigner[2] and Manuel Scholz-Wäckerle[3]

Since the civilization of the Sumer, monies play a central role in the social life of humans. Nevertheless, only within capitalist relations of production money could evolve to the central organizing principle in the political economy. Commodification can be considered as one condition for the metamorphosis of different forms of money. Especially the commodification of the work product leads to the origination of the "general form of value" that is crucial for the further circulation of commodities via prices (Marx 1976: Part 1). Qualities of economically valuable worktime are normalized within an averaging procedure that is casted on concrete labor, in order to set the work products in a totality of exchange relations. Although the capitalist mode of production brings forth a bourgeois class that is proud of the emancipatory potential of private ownership, a particular societal process constitutes the capital relation first, i.e. the generation of the general form of value through averaged work products (abstract social labor). All work processes are generalized and equalized in the money form of value which allows for the "circulation of commodities" (Marx 1976: Chapter 3) eventually. The money form builds upon a complex societal process and stands in stark contrast to the rather original, simple and substantive form of things and their use-value. A detailed treatment of the theory of value and its relevance for this book's core question "on the possibility of a society after money" is given in Chapter 2.1 by Ernst Lohoff.

[1] Both authors have contributed equally to this book chapter.

[2] Corresponding author: ernest.aigner@wu.ac.at
[3] manuel.scholz-waeckerle@wu.ac.at

Following arguments by Marx (1976), Polanyi (1944) and Graeber (2011) it is the emphasis on the exchange rather than the use-value of things that allowed money to evolve through ever-new forms of commodification in economic development. We follow these arguments where money abstracts labor through exchange relations, technology and institutions, and conclude further that this evolutionary economic process shapes the origination and mutation of economic subjectivities. Thereby it is assumed that economic subjectivity is not invariant in economic development, in contrast to the neoclassical economic assumption of an exogenous economic subjectivity with fixed preferences. In addition to that, it seems intuitive that the evolution of economic subjectivities cannot be displayed as an isolated logical sequence of mutations with sharp and unique points of transition. Rather the opposite is the case. Economic subjectivities evolve in complex historical and geographical terms, dependent on interlocking complementarities between technological and institutional changes. In this chapter, we focus especially on the money form as a generic institutional ordering principle for economic subjectivities. Otherwise, technology seeks to catalyse the origination and mutation of economic subjectivities in those emerging social orders. The chapter develops in the following way.

Section one follows an evolutionary political economy approach and derives historical, anthropological and theoretical transformations of early human societies and merchant societies with central arguments by Polanyi (1944) and Graeber (2011). It is shown how the historically specific money form settles the power topology of societies in general and thereby the sovereignty over labor productivity and consequently technological change. Furthermore, we highlight the difference between an "all-purpose money" and "monies for special purposes" for these contested power relations. Those early great transformations of economic subjectivity and the institutional money form have laid the foundations for the further development of more specialized mutations of capitalist economic subjectivities; a process of intensifying dividualization (Deleuze 1992).

In section two, we pay particular attention to the evolution of those novel specialized economic subjectivities in capitalism, the role of the institutional money form and technological change. Four different subjectivities are developed historically along specific money forms: (1) "the worker" and "simple commodity money," (2) "the employee" and "differentiated wages," (3) "the consumer," and (4) "the debtor" are both associated with "private credit, money-capital or simply finance." Every such character mask needs to be understood as a prototype identity of a set of heterogeneous agents for a certain capitalist economic period and not as a homogeneous representative agent. We set those developments roughly in relation to the historical

development of "sovereign," "discipline," and "control/security" societies (Foucault 1975; Deleuze 1992; Lazzarato 2011). The latest step in the evolution of economic subjectivity calls the debtor into play who seems to be locked into a very difficult situation of high private debt that is paralyzing the capacity of agency and progressive change. However, this circumstance alone does not prohibit the evolution of a society after money.

Section three takes a deeper look on the possibility of a society after money. Planetary-scale computation is considered as a major feature of "the second machine age" (Brynjolfsson and McAfee 2014) which we relate to the most recent technological advances with high institutional impact. We elaborate on a specific reading of this technological shift in capitalist economic development, mainly the emergence of "The Stack." Bratton (2015) discusses the origination of the stack as an "accidental megastructure" that constitutes itself along a "platform of platforms." Google, Amazon or Facebook give empirical examples of platforms among others these days. They stand next to states and markets in terms of the organization of economic production and consumption, implying both processes of centralization as well as decentralization. The crucial point for this chapter is given by the evolution of a novel economic subjectivity and a novel form of money within the stack: "the user" and "digital money," where users may be human as well as non-human agents. Following Bratton (2015), the interlocking complementarities between planetary-scale computation and institutional changes such as the emergence of digital money lead to a novel geopolitical sovereignty on global scale. Thereby the stack installs endogenously a variety of socio-technical apparatuses leading to the emergence of a society after money. However, it is not evident that such a society after money builds entirely on values of solidarity and sustainability. The opposite is more likely, i.e. the configuration of a "Black Stack" (Bratton 2015: 351–359). The societal form of such a potential scenario relates more to "cloud feudalism" than to "computer socialism" (compare Chapter 5.1 by Fleissner). Anyway, we highlight some ideas and developments that could stimulate the more solidary and sustainable scenario that is currently labeled and associated with the "Red Stack" (Terranova 2014). Section four concludes.

1. Evolutionary Political Economy: Historical, Anthropological, and Theoretical Transformations

This section develops a brief historical, anthropological and theoretical compass to give an overview about central concepts of money. After introducing functional perspectives on monies, we show its weaknesses and

conceptualize monies as mirrors to societies' power relations. Finally, we differentiate between monies in human, merchant and industrial societies to set the stage for discussing the relations between specific money forms and economic subjectivities in the second section of this chapter.

The first accounts on money go back to Aristotle and define money through three functions for an economy based on barter (Schumpeter 1954: 57–62): medium of exchange ("catallactic"), store of value ("metallist") and unit of account ("institutional"). Money facilitates direct exchange of two goods as a measure of value for both goods and enables the involved parties to store value over time. Today's mainstream economists explain the emergence of money in the same vein, implying that money increased the efficiency of markets, is as such neutral, and does not affect production, circulation or consumption of economic values (compare Graeber 2011, Brodbeck 2012 or Wäckerle 2013).

Congruently, monies facilitate not only exchange but also record obligations in numerical terms; thus debts. The first records of debt obligations go back to the temples of the Sumers about 5000 years ago (Graeber 2011). Contemporary "credit theorists" assume that debt-creation forms states, who, according to them, legitimately create monies that represent the debt obligations citizens have to each other and their ancestors (e.g. infrastructure built by the society somebody is born into). However, the collection of debt has not been limited to their own citizens; but in particular, conquered societies were forced to pay taxes (Graeber 2011). Monies as debts have also been used to strategically provide the military with food: states collected monies (e.g. gold) from farmers that have been given to the military; subsequently farmers were forced to give food as exchange for gold to members of the military (Graeber 2011). Monies in these theories thus address and (re)route debt between agents put in place by powerful actors more or less legitimately. Finally, monies have also been used to compensate for losses, as for example in the case of Wodani people, where a clan receives monies when it loses a member due to murder or marriage (Breton 1999, 2000 and Cartelier 2006); or today in the case of a fine that expresses responsibility and recognizes debt in the case, for example, environmental damage (Kallis et al. 2013).

In each of these perspectives, monies have certain functions, but they define the novelty of money, or money's being-of-itself. One attempt of doing so is made by Brodbeck (2012: 345) who understands money as an agreement between two parties as part of an act of purchase in difference to an act of exchange. Following him, exchange does not necessitate an equivalence between two traded goods, but only an internal identity of the two goods envisioned by each of the respective agent. An argument that stands in

contrast to mainstream economic interpretations of exchange and money. In an act of purchase, both parties assume money as a means of measurement. Hence money is one of the two exchanged commodities, and create equivalence or commensurability between the two goods. Repeated acts of purchase finally establish money in a society, as money is "reproduced through being again and again reciprocally recognized by the involved parties who use it" (Brodbeck 2012: 363). Thereby money constitutes social reality because it is social reality and thus it is best understood as a circular-reflexive category as for example "power".[4] Although circular-reflexive categories lose significance from the moment their meaning is not restored or reproduced by the involved agents anymore (e.g. the king ceases to have power from the moment the tributary ceases to attribute power to him), they constitute social reality for those who are subject to it up to that point. To this extent, money in itself has no power, but is "a semblance [. . .] which organizes social reality" (Brodbeck 2012: 301–305) and thus depends with regard to its form and applicability crucially on the society it is embedded in.

> [O]n the one hand, the seller must settle a "performance debt", delivering a commodity or a service to the buyer; on the other hand, the buyer must settle a "payment debt" to the seller, through the transfer of a certain amount of money.
>
> Saiag 2014: 573

As such, monies, and in particular debt may provide the point of departure for the origination and mutation of certain economic subjectivities. As pointed out, the specific forms of money depend crucially on the historically established social order. One illustrative example is the Wodani people that use a variety of monies for compensations that mirror their belief system. Wodani people live in clans and conceive themselves to "reproduce the substance of Buba's body (the primordial ancestor)," which is composed of a variety of organs. In the same vein, following them, each individual is composed of the same organs. When a clan loses a member, another clan compensates for each of the member's bodily parts with a heterogeneous set of monies, together mirroring the member's and Buba's body as whole. Hence, the compensation is based on heterogeneous monies that cannot be aggregated, are not commensurable or considered "equivalent to people" (Graeber 2011: 158) for which they compensate. In short, humans are equivalent to humans, and monies operate in certain "spheres of exchange."

[4] Such as the king who has power because he is considered by his tributary to have it.

Such monies often emerge as "objects that are used primarily as adornment" (Graeber 2011: 145) of the respective person and are rather "creating" (ibid.) than substituting people. The Wodani monies are cases of "special purpose" monies, where each currency can only be used for a socially regulated specific purpose. In contrast to that, monies in merchant, industrial and today's capitalism are of all-purpose character without being limited to one certain type of goods or social categories (however, they are limited in their extent e.g. the trade of humans is not legal in major parts of the world). Transformations between different specific as well as from specific to all-purpose monies do not only depend on the efficiency of a certain currency but also reflect power relations mediated by appropriated technologies and rearranging reality by shifting discourses, decontextualizing objects or violence in the literal sense. Graeber (2011) gives several examples of such transformations and shows that women, in particular, are their victims. They may originate from community internal[5] or community external[6] forces. Absence of violence or presence of trust hence can also help to understand which money form dominates society and its specific social order.

The appropriation of technologies complements the transformation of money forms, from special purpose monies in pre-capitalist societies to all-purpose monies in merchant and industrial capitalist societies.[7] In line with Arrighi's (1994) long twentieth century, Moore locates the beginning of capitalism in the fifteenth century, when the preconditions for commodification of large parts of the planet's nature and unpaid labor had been set. During that time, among others, merchants in Iberia established a world-praxis based on new, appropriated "technics [. . .] that aimed at 'discovering' and appropriating new Cheap Natures" (Moore 2017: 610). "[N]ew ways of mapping and calculating the world" (Moore 2017: 610) not only revealed new parts of the world but also "shifted what was valued" (Moore 2017: 610). The technics where deployed by extra-economic processes subject to class struggles, mobilized "unpaid work/energy in service to capital accumulation" (Moore 2018: 242) and enabled merchant societies to address ever larger parts of planet's nature through recurring movements of appropriation. To finance such processes the merchant class institutionalized all-purpose

[5] An example for community internal dynamics are the Lele societies (Graeber 2011: 137–144).

[6] External force goes hand in hand with the institutionalization of all-purpose monies. Graeber (2011: 144–158) describes this notion with the example of emerging spiritual societies in the Cross River Area emerging during the times of slave trade.

[7] This does not imply that all pre-capitalist societies only had special purpose money, but that the transformation to capitalism implies a shift to all-purpose money. See also Chapter 4.1 by Christian Siefkes.

monies that, in complement to the appropriated technologies, set the stage for long-lasting capital accumulation processes.

The next major transformation in the money form took place with industrial capitalism when large investments required new forms of money: endogenously generated credit money became the dominant money form, and commercial banks, the economic institutions that generate credit money, gained significant power. The "method of obtaining money is the creation of purchasing power by banks. . . . It is always a question, not of transforming purchasing power, which already exists in someone's possession, but of the creation of new purchasing power out of nothing" (Schumpeter 1934: 72–73). The banking system generates purchasing power ex nihilo as long as the central bank plays lender of last resort. Minsky (1986) was one of the first political economists who has realized that this sequential game between commercial banks and the central bank destabilizes the economy showing that "our economy is unstable because of capitalist finance" (Minsky 1986: 244). Banks borrow money on increasingly speculative basis until overpowered institutions require "bail-out" from authorities. However,

> [t]he profit-seeking bankers almost always win their game with the authorities, but, in winning, the banking community destabilizes the economy; the true losers are those who are hurt by unemployment and inflation.
>
> Minsky 1986: 279

The dominating form of money is always a question of power: "The use of mathematical models and algorithms by capital does not make them a feature of capital. It is not a problem of mathematics—it is a problem of power" Negri (2014: 370). The Gold Standard of the 1930s was conceptualized as an institutional vehicle to stabilize those power relations.

> With some it was a naïve, with some a critical, with other a satanistic creed implying acceptance in the flesh and rejection in the spirit. Yet the belief itself was the same, namely that banknotes have value because they are gold. Whether the gold itself has value for the reason that it embodied labor, as the socialist held, or for the reason that it is useful and scarce, as the orthodox doctrine ran, made for once no difference [. . .].
>
> Polanyi 1944: 26–27

Polanyi (1944) highlights the role of finance in ensuring the "balance-of-power" and points toward the pivotal role money can have in the organization of peace. Further, the organization of money through markets, thus the

creation of the fictitious commodity of money, affects locally operating productive organization and respective organizations. Central banks interfered to mitigate the negative effects of international monetary organization. Money turns out to be endogenous to economic processes, operates over several scales, and shapes their interactions. Congruently, circulation is not neutral but shaped by appropriated technologies and their institutions. This analysis demonstrates that money creation is never a neutral process, that it is subject to ideological appropriation and thereby at the center of hegemonic conflicts between the interest of physical capital (the industrial capitalists) or the interest of finance capital (the rentier capitalist). The history and evolution of money needs to be understood as a tug-of-war over the control of interest rates between industrial corporations, financial institutions and the state who needs to finance its debt as well. In that, the evolution of money is rather an outcome of the economic organization, which again is shaped by the institutional setting brought about by the interaction of more and less powerful actors.

To sum up, the industrial entrepreneurs have gained influence and power to negotiate a new social contract allowing them to (in)directly program the national economic plans. Their power—as every other capitalist power, e.g. finance—stems from ". . . the core principle to extract social value from labor time" (Hanappi 2016). Marx (1976) described this very process with meticulous detail and differentiated between "simple" (ibid.: 711–724) and "extended reproduction" (ibid.: 732): "Nor does it matter if simple reproduction is replaced by reproduction on an extended scale, by accumulation. In the former case the capitalist squanders the whole of the surplus-value in dissipation, in the latter he demonstrates bourgeois virtue by consuming only a portion of it and converting the rest into money." Industrial capitalism is different from merchant capitalism since it features a new form of money that is "money transformed into capital." This transformation was made possible due to novel technological and institutional changes: foremost industrial manufacturing and credit-money provided by financial intermediaries such as banks. Following Hanappi (2016) and Vercelli (2017), we consider the materialization of social value as money in capitalist production systems. In line with the Marxian analysis, money always takes the form it requires for the current mode of production/development and the regime of accumulation (forces of production). It is subject to a techno-institutional lock-in (van Griethuysen 2010 or Pagano 2011) that is able to stabilize the new accumulation at least in the short and medium run. Technological and institutional advances may very well disrupt the inertia of such a regime and lead to progressive changes within the capitalist system. "Capitalism can therefore be considered as the mode of production that lets

money forms change, from simple physical carrier of social value, a symbol, to the form of credit, and finally to its appearance as capital. . . . What was regulated and policed by the institutions of the respective ruling class were the flows of social values that the relevant exploitation processes and their correlated distribution channels produced" Hanappi (2016).

Therefore, the more relevant—and perhaps more complex—research question relates to the specific ideological appropriation of money as a techno-institutional complex. The next section outlines the role of economic subjectivities in un- and inter-locking such complementarities in mutations of capitalism.

2. Evolution of Economic Subjectivities: Which Economic Subjects May Carry a Society After Money?

The historical approach we have followed allows us to look into certain periods of time and investigate economic subjectivity on behalf of the prevalent societal form of money, understood as an abstracting mirror of social, economic, cultural, and political interdependences. We are not just interested in the origination of a certain type of subjectivity but moreover in its mutation in capitalist economic systems. The previous analysis shed light on early human societies and merchant societies from an anthropological and political economy perspective on money. Those previously described types of economic subjectivity are integral to the "societies of sovereignty" that did transform to the "disciplinary societies" with the rise of industrial capitalism (Foucault 1975; Deleuze 1992). During this "great transformation" (reconsider Polanyi (1944)) conditions for the individual change tremendously, to the good and the bad. The novel economic subjectivity emancipates the individual being from enslavement and serfdom; capitalism delivers new freedoms in this regard. Still, on the one hand—as analysed by Marx (1864: Chapter 6)—the working class is substantially subsumed along the commodification of the work product and the worker itself in capitalist societies and on the other hand significantly disciplined in closed environments (Foucault 1975). In the following, we aim to identify four simplified (often-intermingled) types of economic subjectivity with a focus on the working class in industrial and financial capitalism, in order to complement the previous historical and anthropological analysis. Those four types can be summarized to "the worker," "the employee," "the consumer," and "the debtor."

The first type of economic subjectivity represents the prototype worker of the industrial revolution. The factory worker is commodified through its

employment relation, selling its work product to the owner of a factory. The money form that is surrounding the worker appears as simple commodity money. Flowing in from a scare wage it is not enough to pile up savings for extraordinary expenditures. However it is enough to deal with everyday alienation and exploitation, since the "industrial reserve army of labor" (Marx 1976: 781–802) is waiting to replace each other. The factory worker is enclosed in fixed environments and subject to authoritarian monitoring. The worker is a disciplined economic subject. We locate the factory worker in the long historical period that Foucault (1975) has associated with the "disciplinary societies":

> In the eighteenth and nineteenth centuries; they reach their height at the outset of the twentieth. . . . The individual never ceases passing from one closed environment to another, each having its own laws: first, the family; then the school ("you are no longer in your family"); then the barracks ("you are no longer at school"); then the factory; from time to time to hospital; possibly the prison, the preeminent instance of the enclosed environment.
>
> Deleuze 1992: 3

Foucault (1975) made the brilliant analysis that the prison represents the core model for this disciplined subjectivity. Similarly to Graeber (2014), this analysis conceives the predecessor of the disciplinary societies as the "societies of sovereignty," where it was common ". . . to tax rather than to organize production, to rule on death rather than to adminster life" (Deleuze 1992: 3). This notion highlights the institutional role of the money form in the transition between those phases. Industrial capitalism did emancipate the economic subjects since they have gained autonomy with regard to being wage-laborers in contrast to slaves. However, the disciplinary societies—in particular the bourgeois ruling class—did keep the economic subject on a very short leash.

The role of technology is significant for the next transition in the mode of production. Labor productivity increases through novel machines and tools that have marginalized the value of workers' skills and their handicraft. As Brenner and Glick (1991: 59) note:

> How else are we to understand Marx's analysis of "Machinofacture" in *Capital* (published in 1867), which theorizes already-accomplished (though necessarily incomplete) processes of destruction of handicraft labor, subordination of workers to machines, and intensification of labor that were the consequence of the introduction of cost-cutting machinery and were every bit as spectacular as—and in many respects quite

> analogous to—the processes that occurred under the impetus of Taylorism-Fordism?

The upshot of their analysis suggests that the "major transformations of the labor process" (at the turn to the twentieth century) are not to be considered as clean shifts from one model of capital accumulation to another. A critical political economy perspective emphasizes the simultaneity and cumulative causation of many small transformations in contrast to clean shifts. Society transforms in an evolutionary way with concurrent gradual changes, marked by some discontinuities or "events," casted into the collective memory as states of transitions. The regulation school considers one of these alleged discontinuities as the shift to Taylorism and further to Fordism. Brenner and Glick (1991: 58), citing Lipietz:

> In the twenties a revolution in the mode of organization of work was generalized in the United States and partially in Europe: Taylorism. It consisted of an expropriation, by a gigantic and capillary deepening of the capitalist control of the labor process, of the know-how of the collective workers, a know-how which was henceforth systematized by engineers and technicians according to the methods of the "scientific management of work". A further step was the incorporation of this know-how into the automatic system of machines, which dictated the method of work to the workers who had thus been robbed of initiative: such was the productive watershed of "Fordism".

With the intensifying role of the mechanical machine—and the process of automation in general—we move from the disciplinary societies to the control societies and are dealing with a transformed economic subjectivity thereafter: the employee. Money is open to all households in controlled societies, we witness the times of rising consumer credit demand, especially after the Second World War. Furthermore, wages are not scarce and identical anymore, they are getting differentiated, modularized and compared within the new places of production: the corporation: "The factory constituted individuals as a single body to the double advantage of the boss who surveyed each element within the mass and the unions who mobilized a mass resistance; but the corporation constantly presents the brashest rivalry as a healthy form of emulation, an excellent motivational force that opposes individuals against one another and runs through each, dividing each within" (Deleuze 1992: 4–5). In that respect, we are not talking about "the worker" anymore but about "the employee." It is significant to highlight that transformations of economic subjectivity are complemented by the co-evolution of technology and

institutions that is fixing the economic subjectivity in terms of a techno-institutional lock-in.

> Types of machines are easily matched with each type of society—not that machines are determining, but because they express those social forms capable of generating them and using them. The old societies of sovereignty made use of simple machines—levers, pulleys, clocks; but the recent disciplinary societies equipped themselves with machines involving energy, with the passive danger of entropy and the active danger of sabotage; the societies of control operate with machines of a third type, computers, whose passive danger is jamming and whose active one is piracy and the introduction of viruses. Control is short-term and of rapid-rates of turnover, but also continuous and without limit, while discipline was of long duration, infinite and discontinuous. Man is no longer man enclosed, but man in debt.
>
> Deleuze 1992: 6

This economic subject is wearing white instead of a blue collar now and is fully absorbed into the information systems of the cooperation. Some authors associate this particular type of capitalist production with "cognitive capitalism" (Moulier-Boutang 2012) or "bio-capitalism" (Morini and Fumagalli 2010) because all human faculties are seemingly absorbed by capital. This transformation of economic subjectivity occurs at the peak of Fordist accumulation and its crises of the 1970s where production stagnated after the roaring afterwar years of economic boom. The employee represents a significant role in this process: it stabilizes the Fordist regime through mass consumption and destabilizes it through increasing financial activity. The money form did play a very significant role in this transformation again, in particular in the form of "cheap" consumer credit.

> Individuals have become "dividuals", and masses, samples, data, markets, or "banks". Perhaps it is money that expresses the distinction between the two societies best, since discipline always referred back to minted money that locks gold in as numerical standard, while control relates to the floating rates of exchange, modulated according to a rate established by a set of standard currencies. The old monetary mole is the animal of the spaces of enclosure, but the serpent is that of the societies of control. . . . The disciplinary man was a discontinuous producer of energy, but the man of control is undulatory, in orbit, in a continuous network. Everywhere surfing has already replaced the older sports.
>
> Deleuze 1992: 5

As highlighted by Deleuze (1992: 5–6), it is the complex interaction of economic subjectivity with the co-evolution of technology and institutions that is reorganizing the societies in its economic base. Apparently, the economic subjects—who would need to carry a transformation towards a society after money—are "dividualized" and "in-debt." These days, debt is the one entity that integrates capitalist processes and guarantees a continuity of capitalist invasion into social kinds. It is central to the vitality of Post-Fordist accumulation because it provides the feedstock for global finance (Boyer 2000; Stockhammer 2009).

These dynamics establish a certain universality of debt, highlighted by Lazzarato (2011: 7), "Everyone is a 'debtor', accountable to and guilty before capital. Capital has become the Great Creditor, the Universal Creditor." In his analysis, Lazzarato (2011) shows that private debt did create novel economic subjectivities. In particular financial capitalism did originate the "indebted man" who owes a steady contribution to the commercial system of demand and supply. Furthermore, debt did become a tradeable commodity on its own. The performance of the financial system—and thereby the dividend of the rentier class—depends on a constant restructuring of private and public debt, i.e. a universal market for debt. Among many other issues, Ponzi schemes (Minsky 1986) eventually invaded the private as well as the public sector.

With regard to the public sector, we can highlight that the education model of the alleged knowledge economy builds on the intertemporal optimization of people's life-cycles since young people borrow money today—to finance their education—to pay it back with a better job tomorrow—on behalf of the newly earned cultural capital. This type of economic subjectivity perfectly reproduces alienated, commodified and foremost dividualized economic subjects, programmed to work hard and subordinate themselves (Eversberg 2014: 43).

Reflecting a new class struggle, Lazzarato (2013: 66): "[i]n the production of knowledge, class division no longer depends on the opposition between capitalists and wage-earners but on that between creditors and debtors. It is the model the capitalist elites would like to apply to all of society." Those capitalist dynamics create a divided society composed of those living from debtfare and those enjoying wealthfare (Allon 2016). Lazzarato (2013: 68) highlights that "financialization has fully established the 'security societies' [the term security is matched with control in this context] characterized, according to Foucault, by risk and freedom (characteristics which also define liberalism)."

Srnicek and Williams (2015: 145–147) elaborate that a viable counter-hegemonic alternative is given only by a repurposing of existing technology

allowing for large-scale technology appropriation. A proper redesign of money for a (solidary and sustainable) society after money demands technology appropriation (Likavčan and Scholz-Wäckerle 2017) of digital money. In this regard, we focus on the logic of algorithmic automation, the driving force of digital money and its current capitalist appropriation, in order to understand this current techno-institutional lock-in in more detail. Karl Marx once argued in the *Grundrisse*:

> But, once adopted into the production process of capital, the means of labor passes through different metamorphoses, whose culmination is the machine, or rather, an automatic system of machinery (system of machinery: the automatic one is merely its most complete, most adequate form, and alone transforms machinery into a system), set in motion by an automaton, a moving power that moves itself; this automaton consisting of numerous mechanical and intellectual organs, so that the workers themselves are cast merely as its conscious linkages.
>
> Marx 1858: 692

One hundred and fifty years later, capitalist society has witnessed one of these later steps of metamorphoses, speaking of an activated automaton that is representing capital in its purest form, as an algorithm universalizing the principle of capital accumulation (see also Hanappi 2013 and Terranova 2014)—"a moving power that moves itself." Obviously, Marx could have never imagined how close his understanding came to the present technological society of today.

3. Algorithmic Automation and the Economic Subjectivity of Transformation—A Society After Money?

Money is per se not capitalist, but its capitalist appropriation has led to the emergence of newer forms of money, such as finance- or money-capital (Hilferding 1910). In the previous section we discussed the interlocking complementarities between those particular forms of money and certain technological as well as institutional changes in the production apparatuses of capitalism. We highlighted how these complementarities influence the origination and mutation of new types of economic subjectivity and vice versa. Feedback loops between agency and structure go in both directions thereby and lead to co-evolutionary dynamics (Wäckerle 2014) that may eventually carry greater societal transformations as the ones described by Marx (1976) or Polanyi (1944).

This section focuses on technological changes in the realm of information and communication technologies—in particular the planetary-scale computation, ambient computing and algorithmic automation—and their role in digital forms of money. The digital transformation of society was commented on by many scholars, most famously by the sociologist Manuel Castells in a trilogy on the "network society" (Castells 2000). However, quite recently scholars made a differentiation between the phenomenon of digitalization and the comparably newer phenomenon of automation (Brynjolfsson and McAfee 2014). In this respect, automation propels "The second machine age," standing for the substitution of cognitive labor with digital machines (e.g. cloud computing, machine learning and artificial intelligence). Brynjolfsson and McAfee (2014) compare this new mode of production with the first machine age, where physical labor was complemented by mechanical machines. We have extensively analysed the development of the latter processes in the previous section and aim to provide some novel insights on the complementarities between technology, institutions (in particular the money form) and economic subjectivity. This most recent phase of the digital transformation will interlock technology, institutions and economic subjectivity into a novel configuration that recent authors have associated with "planetary-scale computation." Bratton (2015) titles this emerging configuration "The Stack," an "accidental megastructure."

The stack is described as an evolving complex adaptive system compound and intermingled in different physical, biological, human and digital ecologies. It comprises six interdependent layers: earth, cloud, city, address, interface and user. The language of the stack is particularly multi-modal and multi-causal, but still achieves analytical clarity in discussing evolutionary processes of origination and (de)stabilization. We consider the stack as a catalyst for a society after money. Especially platforms are novel economic organizing principles in the stack, standing next to the state and the market. Such platforms include in an early developmental stage "Google," "Facebook," or "Amazon." For now, they are almost entirely absorbed by capitalist appropriation (Srnicek and Williams 2015), probably leading to the formation of a "Black Stack" (Bratton 2015: 351–359). Bratton (2015) warns of such a dystopian "dog-eat-dog" scenario where cognitive labor is fully owned and controlled by the capitalist forces of production. Money may not play a role at all in such a scenario, since wealth is so highly concentrated and thereby not contested anymore. We speak about so-called "cloud feudalism" (Bratton 2015: 307–320) in this regard.

In contrast, one could imagine a transformation toward a society after money in solidary and sustainable terms, a picture drawn by some critical accelerationist scholars, compare Mackay and Avanessian (2014) for an

introduction and overview. Srnicek and Williams (2014) even outline a manifesto about full automation as a real utopia for an internationally united working class. Their aim is to establish visions and strategies in order to liberate the cognitive labor force (compare also Fuchs 2014; Negri 2014; Srnicek and Williams 2015). One of those utopian technological and political imaginaries is considered as the "Red Stack" (Terranova 2014) where digital technology—including algorithms and artificial intelligence—is appropriated by the working class (see Likavčan and Scholz-Wäckerle 2017 for the concept of technology appropriation) for the good of all. Obviously, this metamorphosis represents our preferential scenario for the evolution of a society after money. Currently platforms occupy this unique space of opportunities, because there are not any hard-coded rules for them established. That is why a greater transformation depends on the creativity as well as determination of the economic subjectivity in the stack, most notably "the user."

The user—caught in a cybernetic recursion of observer and observed—is the central unit of analysis in this context of economic subjectivity. At the same time, it has all means to change states of affairs, but is paralyzed to do so, due to its overindividuation. However, we don't have just human agents in mind with "the user," this novel subjectivity includes non-human agents as well. Bratton (2015: 260–265) argues that we are currently dealing with two types for both non-human and human users: the "overindividuated" user and the "hive user." Both are products of economic imperialism where atomized individualization and homogeneity is a core axiom. The overindividuated user stands directly in the heritage of the "homo oeconomicus" and is a "self-quantifying" animal, strictly performing the laws of bourgeois accounting on itself; this holds for humans but also for non-human users, represented by physical sensory robots in this regard. The hive user is a modern child of the "homo oeconomicus" that is following the laws of herding behavior. This is true for all kinds of collective behavior in e.g. social media or algorithmic trading. The decisive question put forward by Bratton (2015: 263) is: "What kind of User can be designed instead?"

The rather simple answer relates to "subtraction" and "design by absence." Bratton (2015: 263) argues that the modern user lost its agency due to overdetermination of the self and the only meaningful reply to this black hole of self-quantification is "removal as design strategy." In particular the author suggests to focus on a "plurality of users" instead of "one single user" or "one singular mass/hive of users." Bratton (2015) is right in this regard, because step-wise removal will reveal real qualitative multiplicities of individual subjects/objects and will thereby show the heterogeneity and diversity of users in contrast to its simplified homogeneity of quantified multiplicities.

> These would perhaps be unaccountable, even invisible to, the dynamics of individualization versus collectivization, physicalization versus virtualization, localization versus globalization—neither solution nor dissolution, only strange columns up and down The Stack, and from strange columns new geographies and geopolitics for a post-Anthropocenic User.
>
> Bratton 2015: 264

In the following, we aim to shed some light on promising interlocking complementarities between the economic subjectivity of "the user" and a new form of money associated with the "address layer" of the stack. The addressing, routing and restructuring characteristics of debt demonstrate the systemic vulnerability of capitalist economic systems. No one can be kept responsible for "big" defaults anymore due to "systemic risk" and interconnectivity of the real and monetary economy. Bratton (2015) considers the recent crisis directly as a crisis of addressability:

> We have suggested that the recent financial crisis was also a crisis of addressability in the kaleidoskopic nesting of asset debt inside collateralized futures inside options and so on not only allowed the contagion to spread without quarantine, but that the absence of a reliable map of this haunted house of intertextual valuation made untangling the rot from the flesh all but impossible. . . . The redesign of money—not just the currency vehicle of exchange, but of the valuation of things and events as such—may also require, or even entail, a more rigorous, flexible, and intricate mechanism for the identification of discrete assets as they twist and turn their way through financial wonderlands.
>
> Bratton 2015: 335

This note characterizes the deep complexity of money as mapping social value and debt obligations on multiple scales into techno-institutional apparatuses. It is intuitive to assume that this task of mapping may be too demanding for human labor, but that is where the non-human users may find their place in a post-capitalist world.[8] Bratton (2015: 335) makes one additional observation in this respect, "Money, as we know, signifies not only value but debt, and anthropology confirms that debt as a technology of social organization precedes the innovation of material tokens to measure it." What Marx (1858) did call a capitalist "automaton" is expressed as "The Stack" by

[8] See Mason (2015: 164) on the materiality (and energy cost) of information and the relation to human labor.

Bratton (2015), an emerging global architecture of soft- and hardware connected via multiple layers and scales and remapping real political geographies.

"Money machines" (Coeckelbergh 2015) conduct the daily business of debt reallocation on a global scale, appropriate digital innovations and produce the biophysical reality of coming generations. Trade is conducted from centralized "trading cockpits" (ibid.) that program mediating algorithms (Lenglet and Mol 2016) to allow for automatic trading. Seemingly they create the global connectedness, forming a "global village" and overcoming distances, as it is often the case with "teletechnologies" (ibid.). However, their pursued decontextualized treatment of objects congruently creates moral distances. The role money has in moral distancing has already been pointed out by Simmel (1907) (see Coeckelbergh 2015). In the system of universal debt, monies distancing of objects justifies the material implications of such trading algorithms, be it the eviction of house owner in the aftermath of the financial crises in the western world (Graeber 2011), displacement of farmers that do not crop their land in line with the bio-economy (Pichler 2015) or the exploitation of physical or digital labor (Fuchs 2014). While territorial power structures often support, enforce and validate these monies and their allocations conducted by algorithms of traders, these developments mirror societies where capital accumulating processes appropriate digital technologies. A greater transformation toward a (solidary and sustainable) society after money would need to be carried by the auto-catalytic processes of a "Red Stack" (Terranova 2014), representing a post-capitalist appropriation by interlocking technological and institutional complementarities in a solidary and sustainable way.

> As Toni Negri puts it, "today, money has the particular function—as an abstract machine—of being the supreme form of measurement of the value extracted from society through the real subsumption of this current society by capital". Since ownership and control of capital-money (. . .) is crucial to maintaining populations bonded to the current power relation, how can we turn financial money into the money of the common? An experiment such as Bitcoin demonstrates that in a way "the taboo on money has been broken", and that beyond the limits of this experience, forkings are already developing in different directions. What kind of relationship can be established between the algorithms of money-creation and "a constituent practice which affirms other criteria for the measurement of wealth, valorizing new and old collective needs outside the logic of finance"?
>
> Terranova 2014: 391

We think that Terranova (2014) is addressing the right questions in this matter, by shifting the attention to the modalities of money as a symbolic carrier system of social values, and highlighting the potential of money as a common and not a capital good. In the same vein as Meretz (2017), Terranova (2014) suggests developing "commonism," or working on the "commonfare" as Fumagalli and Lucarelli (2015) outline. These rather novel conceptions are very promising but need more detailed integration into an evolutionary political economy framework.

Furthermore, digital monies head into a similar direction, with respect to a rebalancing of power and control over current money-capital. The most prominent example is Bitcoin, which is of interest for the technological innovation of the Blockchain algorithm, but also its free market regulatory and discursive framework. With regard to the latter, Bitcoin founders and advocates praise Bitcoin for properties that have been used to uphold the Gold Standard about 100 years ago. Arguments that resemble a form of "digital metallism" are not only found in the language used to describe Bitcoin (Bitcoins are "mined" like gold), but also the regulatory framing of the algorithm, which curbs the mining of Bitcoins and limits them to in total 21 million (see e.g. Bratton 2015). These provisions shall ensure Bitcoin's long-term value appreciation (and not stability, as pointed out by Weber 2017).

The regulations are realized through competition for calculating increasingly complex formulas. While advocating a decentralized ledger, by now the competition has led to a concentration of a few specialized computer centers. Already in 2011, 30 percent of all Bitcoins have been added by seven mining pools. Since the system relies on a decentralized validation, when more than 50 percent of the miners agree to betray the system, the validity of the system fails. The likelihood for such a 51 percent attack is more likely when concentration increases (Beikverdi and Song 2015). Further, most of the computational centers are located in Iceland for the cheap energy and cooling supply, signifying the energy intensity of the validating competition mechanism. Recent estimates show that Bitcoin by now uses about the same amount of energy as Irish national energy consumption (O'Dwyer et al. 2016). This process implies a "direct reference to the heat and carbon at the real bottom of this particular financial stack" (Bratton 2015: 337). Arguments that suggest Bitcoins represent the values of energy or cooling power, however, fall in the same fallacies as those advocates that identified the value of gold in its physical form and not in the social processes creating the semblance of money. In the context of Bitcoin, these arguments are in line with the emerging power of technological-institutional complexes that appropriate "neutral" technologies. However, the legitimacy of Bitcoin is created through an ideologically programmed algorithm, while the regulatory

frame of the use of Bitcoin circumvents socially regulated territories. Bitcoin is available as an all-purpose money to equalize money values with lives in trade of slaves, prostitutes, weapons and drugs, and thus resembles a (de) regulation and (re)territorialization of money through the rules underlying its algorithm (see also Bratton 2015).

The Blockchain technology, however, also provides new avenues. One example could be the Bancor, a framework that is named by a universal international exchange currency once suggested by Keynes. Bancor combines Smart Contracts (thus pre-defined algorithmic routines for exchange) with Blockchain technology to facilitate exchange between digital currencies. Each Bancor consists of two digital currencies. The Smart Contract defines the ratio between the two currencies that figures in the calculation of the exchange value of the respective Bancor. Thus, the exchange value of each bancor is calculated endogenously in each Bancor and thus Bancor can, by design, be exchanged at any time. Bancor provides thereby an open available framework for monetary exchange and a preliminary "algorithmic matching protocol."

Technologies such as Bancor, could, for example, facilitate moderate shifts in the monetary system. Recently Varoufakis (2016) suggested an international digital currency, issued and regulated by the IMF. The idea resembles Keynes' suggestions of the Bancor but enriches it with algorithmic governance, which would enable variable exchange rates, certain regulations and minimize discretionary power. Transparent Smart Contracts in combination with Blockchain could facilitate such regulatory schemes. All payments between member states would pass through that international digital accounts and that, by design, keep international imbalances in check. For example, rules that put a trade-imbalance levy on current-account deficits or surpluses, paid by member states could be implemented to tax capital flight. Both would increase the stability for national economies, reduce herd-like capital flows and sanction speculation. Lastly, an implementation through algorithms would minimize the discretionary power of politicians and bureaucrats over capital transfers. The gained income of such scheme could then be used for "research and development dedicated to green energy and sustainable technologies" (ibid.).

4. Concluding Remarks

In this chapter we have speculated on the possibility of a society after money by looking into the interdependencies of labor productivity (technological change), institutional change (in particular the money form), and the

evolution of associated economic subjectivities. This research started with a historical and anthropological analysis of early human and merchant societies and the role of money for the respective topologies of power in those periods. We have shown that there is a significant difference between the notion of an "all-purpose money" and the conception of "monies for certain social purposes." With the transition from merchant to capitalist societies the "all-purpose" form of money gains hegemony (Marx 1976) with high influence on the evolution of economic subjectivities from now on. Significant types of economic subjectivities in capitalism involve "the worker," "the employee," "the consumer," and "the debtor." We have analysed those types dependent on the interlocking complementarities of technological and institutional change, with a focus on the respective money form. Money is the central organizing principle that finally transforms itself into capital—i.e. finance—seeking for a more effective—that is endogenous—control of human bodies and social orders. We have highlighted that those developments may eventually lead to a society after money, but have expressed a higher likelihood for a "Black Stack" (Bratton 2015). In general, novel interlocking complementarities between technology, institutions and economic subjectivity lead to the emergence of an "accidental megastructure" that is called "The Stack" by Bratton (2015). Planetary-scale computation catalyses a new kind of geopolitical sovereignty that constitutes itself as a "platform of platforms," standing next to states and markets as a separate principle of economic organization. This societal architecture involves the development of "the user" as the most recent type of economic subjectivity. Users include human and non-human agents, allocating their materials and commodities increasingly with "digital money." Eventually, we have highlighted recent developments in the Blockchain technology that could be significant for the emergence of a "Red Stack" (Terranova 2014) that would build on solidary and sustainable values in times of algorithmic governance. This scenario features the technology, the institutions and the economic subjectivity that could provoke a post-capitalist society after money.

References

Allon, F. (2015), "Money, Debt, and the Business of 'Free Stuff,'" *South Atlantic Quarterly*, 114 (2): 283–305, doi:10.1215/00382876-2862718.

Arrighi, G. (2014), The Long Twentieth Century. Money, Power and the Origins of our Times. London/New York: Verso Books.

Beikverdi, A., & Song, J. (2015), Trend of centralization in Bitcoin's distributed network. In 2015 IEEE/ACIS 16th International Conference on Software

Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing (SNPD) (pp. 1–6). Takamatsu: IEEE. https://doi.org/10.1109/SNPD.2015.7176229

Boyer, R. (2000), "Is a Finance-led Growth Regime a Viable Alternative to Fordism? A Preliminary Analysis," *Economy and Society*, 29 (1): 111–145.

Bratton, B. (2015), *The Stack*, Cambridge, MA: MIT Press.

Brenner, R., and M. Glick (1991), "The Regulation Approach: Theory and History," *New Left Review* I/188: 45–119.

Breton, S. (1999), "Death and the Ideology of Compensation Among the Wodani, Western Highlands of Irian Jaya," *Social Anthropology*, 7(3): 297–326.

Breton, S. (2000), "Social Body and Icon of the Person: A Symbolic Analysis of Shell Money Among the Wodani, Western Highlands of Irian Jaya," *American Ethnologist*, 26(3): 558–582.

Brodbeck, K.-H. (2012), *Die Herrschaft des Geldes: Geschichte und Systematik (2., durchges. Aufl)*, Darmstadt: WBG, Wiss. Buchges.

Brynjolfsson, E., and A. McAfee (2014), *The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies*, New York, London: W.W. Norton & Company.

Cartelier, J. (2006), "The Hypostasis of Money: An Economic Point of View," *Cambridge Journal of Economics*, 31 (2): 217–233. Available online: https://doi.org/10.1093/cje/bel022

Castells, M. (2000), *The Information Age. Economy, Society and Culture. Volume 1: The Rise of the Network Society*, (2nd edition), Oxford (UK): Wiley-Blackwell.

Coeckelbergh, M. (2015), *Money Machines: Electronic Financial Technologies, Distancing, and Responsibility in Global Finance*, Farnham, Surrey ; Burlington, VT: Ashgate.

Deleuze, G. (1992), "Postscript on the Societies of Control," *October,* 59: 3–7.

Eversberg, D. (2014), *Dividuell aktiviert. Wie Arbeitsmarktpolitik Subjektivitäten produziert*, Frankfurt: Campus.

Foucault, M. ([1975] 2008), *Überwachen und Strafen. Die Geburt des Gefängnisses*, Frankfurt: Suhrkamp.

Fuchs, C. (2014), *Digital Labor and Karl Marx*, New York, NY: Routledge.

Fumagalli, A. and Lucarelli St. (2015), "Finance, Austerity and Commonfare," *Theory, Culture & Society*, 32 (7–8): 51–65.

Graeber, D. (2011), *Debt: The First 5000 Years*, Brooklyn, NY: Melville House.

Graeber, D. (2014), "On the moral grounds of economic relations: A Maussian Approach," *Journal of Classical Sociology*, 14(1), 65–77. https://doi.org/10.1177/1468795X13494719.

Hanappi, H. (2013), "Money, Credit, Capital, and the State: On the Evolution of Money and Institutions," in G. Buenstorf, U. Cantner, H. Hanusch, M. Hutter, H.-W. Lorenz, and F. Rahmeyer, (eds), *The Two Sides of Innovation: Creation and Destruction in the Evolution of Capitalist Economies*, 255–282, Heidelberg Springer.

Hanappi, H. (2016), "Capital after Capitalism: The Evolution of the Concept of Capital in the Light of Long-run Sustainable Production of the Species," *MPRA Paper* No. 77161.
Hilferding, R. ([1910] 1981), *Finance Capital: A Study of the Latest Phase of Capitalist Development*. Abingdon: Routledge.
Kallis, G., E. Gómez-Baggethun, and E. Zografos (2013), "To Value or Not to Value? That Is Not the Question," *Ecological Economics*, 94 (October): 97–105.
Lazzarato, M. (2011), *The Making of the Indebted Man*, Los Angeles: Semiotext(e).
Lazzarato, M. (2013), *Governing by Debt*, Los Angeles: Semiotext(e).
Lenglet, M., & Mol, J. (2016), Squaring the speed of light? Regulating market access in algorithmic finance. Economy and Society, 45(2), 201–229. https://doi.org/10.1080/03085147.2016.1213080
Lipietz, A. (1992), *Towards a New Economic Order: Postfordism, Ecology and Democracy*, London, Cambridge: Polity Press.
Likavčan, L., and M. Scholz-Wäckerle. (2017), "Technology Appropriation in a De-growing Economy," *Journal of Cleaner Production*, doi:10.1016/j.jclepro.2016.12.134
Marx, K. (1976), *Capital: A Critique of Political Economy*, vol. 1, London: Penguin Books.
Marx, K. ([1858] 1993), *Grundrisse: Foundations of the Critique of Political Economy*, London: Penguin Books.
Marx, K. (1994), Economic Manuscripts, 1861–1864. Marx/Engels Collected Works Vol. 34 (publicly available from Archive.org)
Mason, P. (2015), *PostCapitalism: A Guide to Our Future*, London: Allen Lane.
Mackay, R. and Avenessian, A. (eds.) (2014), *#Accelerate# The Accelerationist Reader*, Falmouth: Urbanomic.
Meretz, S. (2017), "Peer-Commonist Produced Livelihoods", in Guido Ruivenkamp and Andy Hilton (eds.), *Perspectives on Commoning: Autonomist Principles and Practices*, London: ZED Books.
Minsky, H.P. ([1986]2008), *Stabilizing an Unstable Economy*, New York: McGraw Hill Books.
Moore, J. W. (2017), "The Capitalocene, Part I: On the Nature and Origins of Our Ecological Crisis," *The Journal of Peasant Studies, 44*(3), 594–630. https://doi.org/10.1080/03066150.2016.1235036
Moore, J. W. (2018), "The Capitalocene Part II: Accumulation by Appropriation and the Centrality of Unpaid Work/Energy," *The Journal of Peasant Studies, 45*(2), 237–279. https://doi.org/10.1080/03066150.2016.1272587
Moore, J. W. (2015), *Capitalism in the Web of Life: Ecology and the Accumulation of Capital* (1st Edition). New York: Verso.
Morini, C., and A. Fumagalli, (2010), "Life Put to Work: Towards a Life Theory of Value," *Ephemera*, 10 (3/4): 234–252.
Moulier-Boutang, Y. (2012), *Cognitive Capitalism*, Cambridge: Polity.
Negri, A. (2014), Some Reflections on the #accelerate Manifesto, in Mackay, Robin and Avanessian, Armen (eds.) (2014), #accelerate. The accelerationist reader, Falmouth (UK): Urbanomic and Berlin: Merve Verlag: 363-378.

Pagano, U. (2011), "Interlocking Complementarities and Institutional Change," *Journal of Institutional Economics*, 7 (3): 373–392.
Pichler, M. (2015), "Legal Dispossession: State Strategies and Selectivities in the Expansion of Indonesian Palm Oil and Agrofuel Production," *Development and Change*, 46 (3), 508–533.
Polanyi, K. ([1944] 2001), *The Great Transformation: The Political and Economic Origins of Our Time*, Boston: Beacon Press.
Saiag, H. (2014), "Towards a Neo-Polanyian Approach to Money: Integrating the Concept of Debt," *Economy and Society*, 43(4), 559–581. Available online: https://doi.org/10.1080/03085147.2014.898825
Schumpeter, J. A. ([1934] 2012), *The Theory of Economic Development*, New Brunswick, New Jersey: Transaction Publishers.
Schumpeter, J. A. (1954), *History of Economic Analysis*, New York: Oxford University Press.
Simmel, G. ([1907] 2004), *The Philosophy of Money,* 3rd edition, ed. David Frisby trans. Tom Bottomore and David Frisby, London and New York: Routledge.
Srnicek, N., and A. Williams (2014), "#Accelerate: Manifesto for an Accelerationist Politics", in R. Mackay and A. Avenessian (eds.), *#Accelerate. The Accelerationist Reader*, 347–362 Falmouth: Urbanomic.
Srnicek, N., and A. Williams, (2015), *Inventing the Future: Postcapitalism and a World Without Work*, London; New York: Verso Books.
Stockhammer, E. (2009), "The Finance-dominated Accumulation Regime, Income Distribution and the Present Crisis", *Papeles de Europa*, 19: 58–81.
Terranova, T. (2014), "Red Stack Attack! Algorithms, Capital and the Automation of the Common," in R. Mackay and A. Avenessian (eds.), *#Accelerate. The Accelerationist Reader,* 381–399, Falmouth: Urbanomic.
van Griethuysen, P. (2010), "Why are we Growth-addicted? The Hard Way Towards Degrowth in the Involutionary Western Development Path," *Journal of Cleaner Production*, 18 (6): 590–595.
Varoufakis, Y. (2016), *Imagining a New Bretton Woods, Comment on Project Syndicate*. Available online: https://www.project-syndicate.org/commentary/imagining-new-bretton-woods-by-yanis-varoufakis-2016-05?barrier=true (accessed December 2016).
Vercelli, Alessandro (2017), Crisis and Sustainability. The Delusion of Free Markets. London: Palgrave Macmillan.
Wäckerle, M. (2013), "On the Bottom-up Foundations of the Banking-Macro Nexus. Economics: The Open-Access," *Open-Assessment E-Journal*, 7, 2013–40. Available online: http://dx.doi.org/10.5018/economicsejournal.ja.2013-40.
Wäckerle, M. (2014), *The Foundations of Evolutionary Institutional Economics*, Abingdon: Routledge.
Weber, B. (2017), "Competing for Legitimacy: A Typology of Virtual Currencies." Available online: http://blockchain.cs.ucl.ac.uk/wp-content/uploads/2016/11/paper_11.pdf (accessed February 2017).

Part 3

Money as an Alien: Post-monetary Elements in Utopian Literature and Science Fiction

3

Money as an Alien: Post-monetary Elements in Utopian Literature and Science Fiction

Annette Schlemm

Premature Truths

Perhaps we should prepare ourselves for the age after money as for the age after oil.

Jappe 2011

For most of us, there appears to be no alternative to economic activity *with* money. The land of milk and honey is a fairytale. But perhaps there is something more serious to be found in fantasy or utopian novels, or in works of science fiction? Money is a scarce commodity in such works, not because money has been abolished in all these fictional visions of the future, but because the subject of money hardly features at all. Economic issues are not the main focus of fantasy or utopian literature, still less of science fiction; this would after all diminish their entertainment value. Certainly these genres do not usually present a coherent or complete picture of an economy. If this does occur it is most often in texts that construct an ideal city or state. These are usually characterized by a "consistently objective and strictly systematic presentation" (Marzin 1986: 12), and the "absence of a plot in the proper sense" (ibid.). In science fiction, in contrast, the "future world is shown via the plot" (ibid.: 11), and there is no coherent depiction of the economic foundation. Science fiction is mainly inspired by anticipated advances in technology, which are seen as dictating changes in humans and in social conditions—rather than vice versa. Utopias, on the other hand, are mainly concerned with human relationships, to which science and technology are subordinated. These differences could become significant in the search for fictional worlds without money, depending on whether money is understood more as a technical means of organizing human activities, or as an expression of societal relations between individuals. There is, however, no systematic differentiation between these tendencies in the following presentation and

analysis of worlds without money (or at least with other forms of money) in fantastic literature. What is important is the imaginative space opened up by this literature: between what is already a reality in the given conditions, and what could become possible in other conditions. These conditions have to do with both societal relations and the scientific and technological background. The aim is to find literary works which imagine "something that has NOT YET been imagined, something that sees itself within a historical-political framework, and is coupled with a concrete desire to bring about change" (Holland-Cunz 1985: 15). The search for the fossilized remains of alternative worlds imagined in the past is therefore not contemplative and historical in purpose; instead it is a search for still-usable traces of alternative possibilities, whose time—perhaps—has only now arrived. "Utopias are often just premature truths," as Alphonse de Lamartine is said to have written.

Because of the abundance of material, the following discussion can only include a small number of texts (and virtually no other media representations such as films or computer games). After briefly introducing the texts, I consider the premises under which the worlds without money or with other forms of money can be imagined. When quoting the texts I give the original date of publication followed by the date of the edition I am using.

Money in Alternative Futures

Money vs. Virtue in the Classical Political Utopias

In the political utopias of ancient Greece, given the complexity of the state structures, money was seen as necessary for the coordination of the economy, which was based on the division of labor. However, it was felt that the use of money should be strictly subject to factual necessity, and should not become an end in itself. The disadvantages of an excessive focus on money had become clear at this time, and one of the intended functions of the state system was to keep money in check, so that it would not impede virtuous behavior. In his text *The Laws* (around 345 BC), Plato (428/427–348/347 BC) argued that, because of the need for stability, money must only be used "for purposes of . . . daily exchange," but that there should also be a law "which forbids any private person to possess any gold or silver" (Plato, *Laws*: 371). Aristotle (384–322 BC) distinguished between household management in which wealth "in accordance with nature" can be gained (Aristotle, *Politics*: 84 (1257 b 13)) and money-making, which is only concerned with acquiring

and increasing assets. The latter "is justly regarded with disapproval," according to Aristotle, because "it arises not from nature but from men's gaining from each other" (ibid.: 87 (1258 a 19–1258 b 2)).

Gold and Silver for Chamber Pots in the Early Modern Period

Thomas More (1478–1535) reacted to the consequences of incipient capitalism with his work *Utopia* (1516, original title: *De optimo statu rei publicae deque nova insula Utopia*). In everyday economic life in Utopia there is no money, because it only brings evil into the world: "Everyone could so easily get enough to eat, if it weren't for that blessed nuisance, money. There you have a brilliant invention which was designed to make food more readily available. Actually it's the only thing that makes it unobtainable" (More [1516] 1965, 130–131). To prevent anyone from getting too attached to them, gold and silver are used to make chamber pots in Utopia (ibid.: 86).

Tommaso Campanella (1568–1668) had a traveler give an account of his ideal state, the *City of the Sun* (*Città del Sole*, 1602). Here people submit to very direct control, so there is no need for a market-based mediation of the division of labor. They all work four hours a day, their needs are limited, and they therefore need no money for their dealings with each other: "The people of the City of the Sun refuse to take money, but in importing they accept in exchange those things of which they are in need, and sometimes they buy with money" (Campanella [1602] 2013—Gutenberg Project).

Enlightened Utopias and the Path to the Industrial Society

The 1771 utopia *L'An 2440, rêve si'l en fut jamais*, by Louis-Sébastien Mercier (1740–1814), translated into English with the title *Memoirs of the Year Two Thousand Five Hundred*, was the first utopia to relocate the alternative world in the future rather than in foreign lands. In this utopia the last remainders of feudal rule and its abuses have been removed, and a form of capitalism with private property and money, but without credit, has been established.

During capitalist industrialization, some "utopians" resisted the trend toward the accumulation of capital. They did not write literary works, but treatises on projects in which they attempted to put into practice an alternative way of life. Charles Fourier (1772–1836) campaigned for reforms based on an increase in production, the retention of private property, and universal participation in labor. Robert Owen (1771–1858), in his project in New Lanark, a village built around a cotton mill, improved working conditions

considerably, reduced working hours from sixteen to ten and a half, and prohibited work for children under ten. In his own store, prices were twenty-five percent lower than in the surrounding area, allowing good profits. When Owen then shifted to communist positions, and wanted to impose collective ownership, his previous supporters turned away from him, and public opinion turned against him.

One writer who explicitly denounced the existence of money was Étienne Cabet (1788–1856), with his utopia of a communist polity entitled *Voyage en Icarie* (Travels in Icaria, 1840). The Icarians have "neither property nor money, nor selling nor buying" (Cabet [1840] 2003: 81), and the planning, the organization of production and the distribution of goods is carried out by "the republic, or the community" (ibid.: 82).

Visions of the Future in the Industrial Society

Still traveling hopefully toward the revolution, August Bebel (1840–1913) gave concrete form to ideas of a socialist future after the revolution in his 1872 text *Die Frau und der Sozialismus* (*Woman and Socialism*). He based this on extensive analyses, so the descriptions do not come across as mere speculation. Bebel believed that if everyone worked for 2.5 hours per day, on the basis of highly developed science and technology, enough goods could be produced for everyone. Distribution would be based on labor certificates, as Marx would propose three years later for the initial phase of communism (Marx [1875] 1983: 20). In Bebel's words: "It can easily be calculated how much social labor will be necessary for the manufacture of each product. . . . Any kind of certificate, a printed piece of paper, gold or tin, enables the holder to exchange same for various kinds of commodities" (Bebel [1872] 1910: 398). These labor certificates are not money, because "We should like to know how a member of socialistic society could 'hoard' his gold working certificate or could even loan it on interest, when all the others also own what the one offers and—*on which he lives*" (ibid.: 399).

The 1888 novel *Looking Backward: 2000–1887*, by Edward Bellamy (1850–1898), led to the founding of dozens of associations of people who wanted to make his utopia a reality. In the year 2000, in this utopia, money has been completely abolished (Bellamy [1888] 2007: 40). International relations are conducted by means of an "international council" rather than markets (ibid.: 40). Goods are allocated to the people on the basis of credit, which is granted to each person per year in accordance with his or her share of total annual production—regardless of individual performance (ibid.: 14). The goods are assigned a "price" which corresponds to the costs of their production (ibid.: 63). The vouchers are still called "dollars":

"We have kept the old word, but not the substance. The term, as we use it, answers to no real thing, but merely serves as an algebraical symbol for comparing the values of products with one another" (ibid.: 14).

Alexander A. Bogdanov (1873–1928) also made an extremely important contribution to a future socialism. In his two utopian books, *Red Star* (1907) and *Engineer Menni* (1912), he outlined, among other things, a mechanism for the organization of labor: "a self-organizing supersystem without that fatal wasting of energy which was an unavoidable consequence of all lower stages of development" (Rollberg 1988: 294). One reason money is not needed here is that people develop a natural need for work (Bogdanov [1912] 1984: 66).

In contrast, twentieth-century utopias from the capitalist countries do not envisage a world without money. In B. H. Skinner's (1904–1990) novel *Walden Two* ([1948] 1976) there is money, although the economy is not focused on making money, but on "the things that money buys," as Skinner later wrote (1976: xi). There are no coins or bills, but entries in a ledger. In Aldous Huxley's (1894–1963) utopia *Island* ([1962] 2005), the economy is organized according to cooperative principles, there are still silver, gold and copper coins (ibid.: 149) and a Raiffeisen-style borrowing and lending system (ibid.).

Even in the anarchist utopia in E. F. Russell's (1905–1978) "And Then There Were None" (1951), work has to be rewarded. Anyone who does something for another person imposes obligations on them (ibid.: 14). There is no general book-keeping, just notes recording these "obs." It is expected that no one will live complete at the expense of others, and this works because everyone knows each other personally. The story of "Idle Jack," who initially manages to "scratch" off others for a long time, but eventually hangs himself when no one gives him anything any more, is used for educational purposes (ibid.: 28).

In *The Dispossessed* ([1974] 2001) by Ursula Le Guin (1929–2018), there is no such thing as money in the anarchistic world on the moon Anarres. The function of coordination is fulfilled by an "administration and management network" referred to as PDC ("production and distribution coordination"). This is "a coordinating system for all syndicates, federatives, and individuals who do productive work. They do not govern persons; they administrate production. They have no authority either to support me or to prevent me. They can only tell us the public opinion of us—where we stand in the social conscience" (Le Guin ([1974] 2001: 76).

In the novel *Ecotopia* ([1975] 1990) and the subsequently written prequel to this utopia, *Ecotopia Emerging* (1981), by Ernest Callenbach (1929–2012), the means of production are transferred to the ownership of those who work with them (Callenbach [1975] 1990: 97–99, Callenbach [1981] 1982: 37, 129).

Barter features here, especially in times of crisis and transition (Callenbach [1981] 1982: 45), some services are provided for free, such as local buses and rental bicycles. Banknotes still exist, but are no longer important as instruments of power, but solely because of their "utility value" (Callenbach [1975] 1990: 88).

In the time-travel films from the Star Trek series, *The Voyage Home* (1986) and *First Contact* (1996), the crews of the Enterprise take a while to get used to the money in the past. Captain Picard explains to the assistant of the inventor of the warp drive: "The economics of the future are . . . somewhat different. Money doesn't exist in the twenty-fourth century [. . .] The acquisition of wealth is no longer a driving force in our lives. We work to better ourselves" (Dillard 1996: 143).[1]

Utopias in the Interim Period of Real Socialism

The utopian novels from the early period of real socialism were still thoroughly infused with the historical optimism of the time, and tried simultaneously to inspire hope of a better future, in view of the shortages being experienced in reality. Eberhard del Antonio's (1926–1997) novel *Titanus*, published in 1959, is a prime example. A spaceship traveling to the Pleiades contains not just people already living in the communist world, but also an American and an Italian, to whom the customs of communism (which are also followed on the spaceship) can be explained. According to these explanations, there is still money in the non-capitalist countries, but it is has become almost irrelevant. The American's attempt to give a tip to the person who brings wine is rejected (del Antonio [1959] 1985: 91f.). He doubts the vision, which has apparently become a reality: "These optimists! Basically they were splendid fellows. But a classless society, equal rights to life? They even wanted to abolish money. Utopia! Who would still work in such a society? And yet—he worked too, even though he already got what he wanted. The scientific thirst for knowledge? He had to have a good think about it" (ibid.. 123).

Political Utopias of the Present

Texts that are not primarily for entertainment, but serve to depict alternative visions of the future, usually pay some attention to the economic foundations of the new society. In *Bolo´bolo* (1983) by P. M. (Hans Widmer, born 1947), it is possible to dispense with money, because its mediating role is replaced by

[1] In spite of this, money is often mentioned even within the Federation in many episodes of the series belonging to the Star Trek universe (see a compilation in the Memory-Alpha-Wiki).

a "direct, personal context for living" (P. M. 1983: 35) in autonomous, self-sufficient communities with around five hundred individuals. "It is nonsense to propose a system of *direct*, personal and ecological exchange and to permit at the same time the vehicle of anonymous, *indirect*, centralized circulation (money)" (ibid.: 43).

Since the 1990s, however, the means chosen to mediate social relations has once again been money or something similar to money. In the story *Börsenkrach oder das Schlüpfen des Schmetterlings: Eine utopische Erzählung* [Stock market crash or the hatching of the butterfly: A utopian tale, 1997], Bernd Leßmann depicts a kind of replacement for cash in the form of direct debit authorizations (Leßmann 1997: 62).

Steve Cullen's story *The Last Capitalist* (1996) is based on Silvio Gesell's concept of alternative money. There is "Work Script" (Cullen 1996: 33), notes of work done (ibid.: 34), which become invalid after a few months. They are "a type of money with all its convenience for exchange and economic life yet with none of the drawbacks of encouraging and permitting racketeers" (ibid.: 35)

The 2012 utopia *Gemeinsam! Eine reale Utopie: Wenningen 2015* [Together! A real utopia: Wenningen 2015] by Steffen Andreae (b. 1966) and Matthias Grundmann is based on the idea that an unconditional basic income is introduced in Wenningen. For 890 euros per month, people are expected to do voluntary work or help their neighbors for ten hours (Andreae and Grundmann 2012: 45). At the same time, a regional currency is introduced (ibid.: 33, 126), with "fifty percent of pensions and the wages of municipal employees [being paid] in the regional currency" (ibid.: 80).

Science Fiction Utopias Since the Turn of the Millennium

Some of the science fiction novels published since 2000 which refer to the economy extrapolate from new experiences in the world of digital social networks.

The novel *Down and Out in the Magic Kingdom* (2003) by Cory Doctorow (b. 1971) depicts a "reputation economy" (Doctorow 2003: 174), in which "Whuffies," as "personal capital" (ibid.: 14) indicate the degree of esteem and respect in which a person is held. This new currency is meant to realize the "true essence of money" (ibid.), without giving a small number of wealthy people power over others. Hence Doctorow's insistence, in an interview, that "in a Whuffie society, there's no such thing as a rich a—hole" (Koman 2003). Nonetheless, the whole thing remains a "meritocracy" (Doctorow 2003: 70). Someone who has few or no Whuffies can only fulfill his needs to a limited extent. For example, if your Whuffie level drops too low other people can suddenly drive the car you have been driving, or move into your apartment.

In *Freedom™* (2010) by Daniel Suarez (b. 1964), where the "darknet" is developing as an alternative to contemporary society, darknet credit is regarded as the new digital alternative currency (Suarez 2010: 103). It is used to fund new self-organized communities on a regional level, and to power "a local, sustainable economy" (ibid.). "Here it is being invested in people and projects that have begun to return value—not in dollars, but in things of intrinsic human worth. Energy, information, food, shelter" (ibid.: 68). As the capitalist economy takes away more and more people's livelihood, they can switch to the darknet economy. Those who have previously been in power are eventually ousted by deleting the data proving their wealth: "Money, after all, is just data, and yours has been erased" (ibid.: 381).

Similarly, in the story *Invasion der Cognoiden* [Invasion of the Cognoids], 2008, by Peter Kempin and Wolfgang Neuhaus, new technologies allow an "economic metasystem which was able to record and communicate the data of goods and their movements beyond the boundaries of individual companies" (Kempin and Neuhaus 2008: 753). "At first the principle of valorization was not eliminated by the technological processes, but as the decades passed it was increasingly repressed" (ibid.: 753). Social mediation by way of "connections," that is possession and control, has been successfully replaced by the "hegemony of factual logic [. . . .], in which knowledge counts, and not power" (ibid.: 759). "Machines with non-biological hardware and sofware, which have both a real and a virtual existence," called "cognoids" for short, are designed not to make decisions outside of human relationships, but "to fit into processes determined by humans, depending on the constellation" (ibid.).

In the novel *Accelerando* (2005), by Charles Stross (b. 1964), money is seen as a symptom of poverty (Stross 2005: ch. 1). The novel is based on the idea that parts of civilization are moving so far away from the remaining parts, due to their extremely accelerated development, that there are different levels, i.e. developmental forms, existing simultaneously, the most extreme form being the transhuman. These levels also differ in their economies and their approach to money. "Economics 1.0" is made up of traditional free market versions (Stross 2005: ch. 8). Here the point is to overcome the "economics of scarcity" (ibid.: ch. 1). At the same time, a so-called "agalmic economy" is developed, that is, an economy partly based on open-source initiatives and free access to intellectual property. The subsequent "Economics 2.0" uses "superior deterministic resource allocation algorithms" (ibid.: ch. 7). This vision is not presented as desirable for those involved, who are now no longer made of flesh and blood, but of uploaded data: "The uploads found their labor to be a permanently deflating commodity once they hit their point of diminishing utility. Capitalism doesn't have a lot to say about workers whose

skills are obsolete, other than that they should invest wisely while they're earning and maybe retrain: but just knowing how to invest in Economics 2.0 is beyond an unaugmented human" (ibid.: ch. 7). For the units of consciousness, now uploaded in a galaxy-wide network, their views and experiences count as units of currency. "Money in Economy 2.0 is quantized originality—that which allows one sentient entity to outmaneuver another" (ibid.: ch. 7). Those that still exist as biological beings, e.g. on Saturn, are still provided for. "The spaceborn polities are kind to indigents, for the basic requirements of life are cheap, and to withhold them would be tantamount to homicide" (ibid.: ch. 9).

Premises for a Society With Different Money or Without Money

> *We exist for Earth not as a model or experiment. A thought experiment for humanity to learn from.*
>
> Robinson [1992] 2009: 472

The utopian and science fiction works which deal with a different economy do not have to take the trouble to present a coherent theory. Moreover, these topics are usually only touched on briefly. It is possible, however, to identify certain typical premises for an alternative approach to money or the renunciation of money. For reasons of space this chapter does not deal with other important matters such as ownership structures.

Enough For All: Eliminating Scarcity

It is difficult to reconcile a utopia without money with a shortage of essential goods. Thus the visions of a money-free society are nearly all based on the elimination of scarcity. This shows, firstly, that the possible mediation of scarce commodities without money, a long-established practice in many cultures, has not found its way into utopian fiction, and, secondly, that the money is seen mainly as serving to mediate the division of labor and the processes of distribution and exchange. This reproduces classic bourgeois theories of money.

Limiting Consumption

In all the utopias created before the industrial age, with its great expansion of mass consumption, universal social equality is based on a conscious decision not to expand consumer needs. In the classical utopias, virtue always takes priority over wealth. The early modern utopias are also content with what is already available. In Thomas More's *Utopia*, distribution takes place via

depots in the middle of every district, where the head of a household can receive everything "without any sort of payment, either in money or in kind": "There's more than enough of everything to go round—for why should anyone want to start hoarding, when he knows he'll never have to go short of anything?" (More [1516] 1965: 80). In Campanella's *City of the Sun*, commodities are "reckoned of little value [. . .] For no one wants either necessaries or luxuries" (Campanella [1602] 2013). In Mercier's capitalist economy in 2440, the economy serves only to produce what is needed, and there is no dynamic of the accumulation of capital. Diamonds and pearls, which harden the heart, are discarded: "We have cast into the sea those deceitful diamonds, those dangerous pearls, and all those whimsical stones that rendered the heart, like them, impenetrable" (Mercier 1772: 189). In the novel *Titanus*, by Eberhard del Antonio from East Germany, there is enough for everyone, if everyone limits themselves to a reasonable level. The American asks: "But just picture this: I go into a shop and take twenty suits at once. You only take one—how unfair!" The answer he receives is: "But you *can* do that, Stafford! Nobody will stop you if you take twenty suits from the shop."—"What would I want with them? I can't wear more than one . . ." (del Antonio [1959] 1985: 118–119).

In Ernest Callenbach's *Ecotopia Emerging*, care is taken to ensure that the population does not grow (Callenbach [1981] 1982: 38). In Ursula le Guin's *The Dispossessed* the natural conditions of life on the moon Anarres are austere to begin with, and expectations about the standard of living must therefore be lowered (Le Guin [1974] 2001: 150).

Abundance

If money is seen as a means of regulation when dealing with scarce commodities, its purpose vanishes when nothing is scarce any more. Scarcity can be eliminated either by distributing what is available sensibly and fairly, and/or by producing more. In Bellamy's novel ([1888] 2007: 140ff.) it is enough simply to dispense with all the wastage that occurs in capitalism, such as losses that occur when companies fail because of competition, as a result of periodical overproduction and crises, or because of inactive labor and capital. Furthermore, there is no longer any spending on defense and on public officials, no expenses for financial operations, trade no longer exists, and the collectivization of housework alone "might possibly be equivalent to the addition to your annual production of wealth of one-half its former total" (ibid.: 135).

In the novel *Excession* (1996) by Iain M. Banks (1954–2013), from the Culture series, all deficiencies and scarcities have been overcome. Money is still used, but it is viewed critically, because "money is power, money is influence, money is effect" (Banks [1996] 1997: 98). In the area of "Economics

1.0" in Charles Stross's novel *Accelerando*, eliminating scarcity and thereby rendering money superfluous is still seen as a goal. "[Gianni] wants to make everybody so rich that squabbling over ownership of the means of production makes as much sense as arguing over who gets to sleep in the damp spot at the back of the cave" (Stross 2005: ch. 3).

Later, "deterministic … algorithms" take over "resource allocation" (ibid.: ch. 7). After the uploading of the contents of consciousness into the cosmic network, there is a new form of scarcity, namely that of bandwidth (ibid.: ch. 5).

Everyone Joins in the Work

If there is no money to function as a motivation for work, the authors of the utopias must consider why people would nonetheless do sufficient work. All the traditional, early modern and (early) socialist utopias assume that everyone must work, even if to a lesser extent than in the author's own time. In Thomas More's *Utopia*, for example, people only get something to eat if they have done a corresponding quantity of work, six hours a day: "wherever you are, you always have to work" (More [1516] 1965: 84); "under such a system, there's a bound to be plenty of everything" (ibid.: 84). In Campanella's *City of the Sun* everyone has to work four hours a day.

The socialist utopias also assume that it is necessary for everyone to work, though to such a small extent that life is no longer consumed by work. In his text, *Die Frau und der Sozialismus* (*Woman and Socialism*), for example, August Bebel works on the basis of calculations that 2.5 hours of work per day would be sufficient. Everyone, however, would have to participate in this work. Every person must "serve to the best of their physical and mental abilities in producing the commodities that are needful to satisfy the requirements of all" (Bebel [1878] 1910: 370). The "equal duty to work for all" (ibid.: 399) is not so much targeted at laziness in people in general, as against the previous exemption of the rich. "The scriptural saying: 'In the sweat of thy brow shalt thou eat thy bread,' will then prevail with the heroes of the stock-exchange and the drones of capitalism, also" (ibid.: 434). But of course it also applies to every individual: "Lazy persons, shirkers of work, are met with in bourgeois society only. Socialism is agreed with the Bible in asserting that 'he who will not work neither shall he eat' " (ibid.: 370). There is also a duty to work in the year 2000, in Edward Bellamy's novel: "if it were conceivable that a man could escape it, he would be left with no possible way to provide for his existence" (Bellamy [1888] 2007: 37).

In the socialist utopia of Alexander Bogdanov's *Red Star*, everyone can engage in the world of work in accordance with their inclinations: "Except for the capitalists on pension, for about a century there was an obligatory

working day of six hours at first, which was successively shortened. Technical progress and the exact computation of available labor, however, finally helped to eliminate even these last vestiges of the old system" (Bogdanov [1912] 1984: 56)

In Cory Doctorow's novel *Down and Out in the Magic Kingdom*, work is no longer forcibly imposed by the need to earn money, or by direct and/or moral pressure. People with few Whuffies or none at all, however, can only fulfill their needs to a limited extent. Nonetheless, basic needs continue to be met: "While I couldn't get a table in a restaurant, I was free to queue up at any of the makers around town and get myself whatever I wanted to eat and drink, whenever I wanted it. Compared to 99.99999 percent of all the people who'd ever lived, I had a life of unparalleled luxury" (Doctorow 2003: 156).

Science and Technology

Science and Technology to Make Work Easier and Eliminate Scarcity

Aristotle had already speculated about the possibility of using technological progress to overcome the subordination of servants and slaves: for "if … shuttles in a loom could fly to and fro and a plucker play a lyre of their own accord, then master craftsmen would not want servants, nor masters slaves" (Aristotle, *Politics*, 65, 1253 b 18). In Campanella's *City of the Sun*, technical innovations are greatly appreciated. For example, a door is described that "can be raised and let down … by a marvelous device" (Campanella [1602] 2013). Work and life are made easier by a fountain where the water can be raised "by the sole movement of a cleverly contrived handle" (ibid.), "wagons fitted with sails which are borne along by the wind" (ibid.), and ships "which go over the waters without rowers or the force of the wind" (ibid.).

Science and technology also facilitate work in August Bebel's text. The idea is that "dirty, disagreeable work [should be performed] by means of mechanical or chemical devices," and "in such a manner that most of the unpleasantness connected with them for the laborers, would disappear" (Bebel [1878] 1910: 402–403). Bebel enthusiastically invests his hopes in the powers of electricity. "The revolutionizing effect of the most powerful of all natural forces will only hasten the overthrow of the bourgeois world and help to usher in Socialism" (ibid.: 383). In the countryside, "only by the appliance of science and [technology] does the peasant attain the full development of a civilized human being" (ibid.: 416). Technology for renewable energies is fundamental in Callenbach's *Ecotopia* too. As well as photovoltaics, Callenbach also mentions other "integrated systems" in production (Callenbach [1975] 1990: 134). And in the "technocommunism" of the world of cognoids, "a

largely automated social basis is … a condition for new forms of self-determined work and self-government" (Kempin and Neuhaus 2008: 749).

Science and Technology for New Modes of Mediation

Money is often seen as a means of regulating the division of labor and the distribution of the goods produced. Only when the social context is reduced to relatively small, decentralized units of living and production, as in *Bolo'bolo*, is it possible to dispense with the mediating function of money, because it is replaced by a "direct, personal context for living" (P.M. 1983: 35).

Even in antiquity, however, the economic contexts in Europe had begun to grow beyond this level. In the classical visions of ideal states, money was not meant to be used to boost wealth, but to mediate processes of the division of labor.

More and Campanella's utopias of order replace the coordinating function of money with direct control. The early capitalist utopians, Fourier and Owen, did not believe they could dispense with money for mediation. Marx and Bebel advocated labor certificates, at least for the first stage of development after a revolution.

Alexander Bogdanov was the first to replace this mediating function of money with statistical calculations. The idea is that the necessary tasks are indicated on display panels at the places of work: "The figures change every hour … In the course of an hour several thousand workers announce that they want to change jobs. The central statistical apparatus takes constant note of this, transmitting the data hourly to all branches of industry" (Bogdanov [1912] 1984: 66)—"'But how does the central apparatus arrive at its figures on surpluses and shortages?' 'The Institute of Statistics has agencies everywhere which keep track of the flow of goods into and out of the stockpiles and monitor the productivity of all enterprises and the changes in their work forces. In that way it can be calculated what and how much must be produced for any given period and the number of man-hours required for the task'" (ibid.).

In Ursula le Guin's novel *The Dispossessed* (1974), the mediating function of money is replaced by a network of administration and management (PDC), though this is at the price of reduced complexity. For many years it seemed that highly productive industrial production systems could not get by without the mediating function of money. But the age of the internet, especially the digital social networks, encouraged new ideas about how technology might mediate the relationships between economic actors. In *Freedom*™ by Daniel Suarez, darknet credit proves to be a digital currency offering an alternative to those people who no longer have a place in the ruling economy. In paralel, alternative projects to ensure survival are

developed in the real world. In Kim Stanley Robinson's novel *2312*, the solar system has a mixed economy made up of the remains of capitalism and of a non-market economy based on supercomputers and artificial intelligence (Robinson 2012: 125).

In Charles Stross's novel *Accelerando* a system of algorithms is developed to allocate resources. This system is called "Economics 2.0," with the "2.0" standing for interactions which humans cannot understand (Stross 2005: ch. 8). At this time debates were also beginning in the real world about the analysis of websites and personal and economic data by algorithms and big data mechanisms. In *Accelerando*, even before they have themselves uploaded into the digital world, humans are "just barely intelligent tool users . . . . sadly deficient in smarts" (ibid.: ch. 7).[2] This is one of the reasons why this novel is not really a utopia, as Stross has said elsewhere (Stross 2007: 529).

The texts by Ernest Aigner, Manuel Scholz-Wäckerle, and Stefan Heidenreich in this book connect to these depictions of a new digital mediation in economic and social life.

Human Nature

The question of money in a society is not just an administrative or economic one. It masks another, actually more important question, that of how people cooperate with each other in their society, how they coordinate their activities with each other. Debates about whether or not people's interactions should be mediated by money often point to different perceptions of human nature, as is also shown in the trialogue between Lohoff, Pahl and Schröter in this book.

[2] Here there is an interesting connection to the idea of a "resource-based economy." This is based on a vision of the future which has become known through the film *Moving Forward* (2011) by Peter Joseph (b. 1979), from the *Zeitgeist* series. The concept is closely linked with the Venus Project, developed by the visionary Jacque Fresco (1916–2017), and is propounded by the Zeitgeist movement. The idea is that the knowledge needed to manage resources can "be obtained by real time electronic feedback coming from all resource sectors of the planet, fed into a central computer database that monitors any growing scarcity or problem" (Joseph, Meadows, and Fresco 2009: 49). As money is seen solely as a "means of information" in conditions of scarcity and undeveloped technology, "the tradition of labor for money and money for resources no longer has a logical basis" (ibid.: 48). The term "resource-based economy" exactly formulates the alternative to the "money-based economy" that has existed so far, as briefly described above. According to this concept, human decision-making becomes obsolete along with money: "In a resource-based economy, *people do not make decisions*, they *arrive at them* through the use of advanced technological tools that incorporate The Scientific Method. There is no 'Republican' or 'Liberal' way to design an airplane . . . so why should we use these outdated worldviews in society today?" (ibid.: 58).

The well-known early modern utopias of More and Campanella sought to establish the basis for a stable state, because of the historical upheavals the authors had experienced. In the course of the sixteenth century, the individual was "increasingly seen as driven by destructive passions" (Sonntag 1999: 103) and thus as disruptive to the desired order. This explains why the utopias of More and Campanella try to ensure that humans are regarded as essentially the same, and that this is reflected, for example, in their clothing. Rigid, stabilizing structures of order do not allow any of the emancipatory individuality we expect today, and so we can no longer identify with these utopias. But there was one small exception even then. In *Gargantua* by François Rabelais (1494–1553), the Abbey of Thélème is depicted. The people described here, "who are free, well bred, and conversant with honorable company, have by nature an instinct—a goad—which always pricks then towards virtuous acts and withdraws them from vice. They called it Honour" (Rabelais [1542] 2006: 373). The rule governing this elite order is "Do what thou wilt" (ibid.), and it goes without saying that money is not needed.

Many other utopias stipulate that people must be educated in such a way that they can live sensibly in this utopia. At the same time the notion is considered, e.g. by Robert Owen, that upbringing, education, and circumstances determine human behavior, and that the latter must therefore be arranged accordingly. In Huxley's *Island*, the culture is based on Buddhist-influenced practices and ideas, and the people follow a "road that leads towards happiness from the inside out, through health, through awareness, through a change in one's attitude towards the world; not towards the mirage of happiness from the outside in, through toys and pills and non-stop distractions" (Huxley [1962] 2005: 207). In his novel *Walden Two*, the psychologist B. F. Skinner describes the concept of behavioral conditioning in the education process. He also suggests that an applied "science of human behavior" (Skinner [1948] 2005: 182) will be able to replace politics based on aspirations to power. "Our members are practically always doing what they want to do—what they 'choose' to do—but we see to it that they will want to do precisely the things which are best for themselves and the community. Their behavior is determined, yet they're free" (ibid.: 279).

Although work and education also play a major part in the socialist utopias, there is a stronger presupposition here that work fulfills people's needs. On Bogdanov's *Red* Star, for example, we find the following dialogue: "'Do you mean that you can do all this without money, documents certifying that a certain amount of labor has been performed, pledges to perform labor, or anything at all of that sort?' 'Nothing at all. There is never any shortage of voluntary labor—work is a natural need for the mature members of our society, and all overt or disguised compulsion is quite superfluous'"

(Bogdanov [1912] 1984: 66). A similar argument is found in del Antonio's novel: "Anyone who does nothing is ill . . . There is no such thing as a healthy person who does not engage in any activity. The urge to be active is inherent in beings gifted with reason, whose abilities are lovingly tended" (del Antonio [1959] 1985: 354–355). On Anarres, in Ursula Le Guin's novel, "A child free from the guilt of ownership and the burden of economic competition will grow up with the will to do what needs doing and the capacity for joy in doing it. It is useless work that darkens the heart" (Le Guin [1974] 2001: 247).

Bogdanov's futuristic novels, especially the second work, *The Engineer Menni* (1912), describe in detail how the children of the revolutionaries differ from their fathers. The father is still characterized by isolation and coldness (Bogdanov [1912] 1984: 193)—it is only in the son that the personality can develop in the person (ibid.: 205). This leads to the emergence of a "qualitatively new type of interpersonal relationship—"cooperative collaboration"—, [which] is characterized by the generation of rational norms, by individual freedom, personal responsibility, equal rights, and discursive, collective problem-solving" (Soboleva 2008: 4).

Of course human relationships will not be conflict-free even with other structures of ownership, as emphasized by Kim Stanley Robinson in the anthology of short stories *Martians* (1999). He writes: "people are still people; argue, resent, hate, are selfish, will share only with kin or those they know, if that is what you mean by 'human nature'; but are now in an economic framework where they are roughly equal to those they despise, and cannot grossly oppress or be oppressed by them, financially" (Robinson 1999: 201).

A new trend, related to the increasingly popular vision of transhumanism, and the real-life practices of big data and data mining, is to see humans as incapable of understanding the complex processes of tomorrow's world of production, and of making decisions. In the "technocommunism" of Peter Kempin and Wolfgang Neuhaus's *Invasion der Cognoiden*, these "artificial units of consciousness" are still integrated into "processes determined by humans" (Kempin and Neuhaus 2008: 755). But in the novel *Accelerando*, by Charles Stross, the algorithms are already "superior," and the term 2.0 in "Economics 2.0" stands for the fact that humans can no longer understand it (Stross 2005: ch. 8), that is, humans are "just barely intelligent tool users . . . . sadly deficient in smarts" (ibid.: ch. 7).

Not Everything Is Better Without Money

If it is not possible to develop a higher form of society, then dispensing with money can also have disadvantages, as Marx already knew: "Strike out money, and one would thereby either be thrown back to a lower stage of production

(corresponding to that of auxiliary barter), or one would proceed to a higher stage, in which exchange value would no longer be the principal aspect of the commodity, because social labor, whose representative it is, would no longer appear merely as socially mediated private labor" (Marx [1939] 1973: 214). This situation is depicted in Reinmar Cunis's (1933–1989) novel *Wenn der Krebsbaum blüht* [When the Crabtree Blooms, 1987]. After substantial refugee and migration movements caused by global environmental disasters, new communities come together, in which a few "independent small feudal systems" (Cunis 1987: 443) develop, whose economic dealings with each other are once again based on contributions in kind. In other utopias without money, social control is used to regulate work and consumption, as in the story of "Idle Jack" in Russell's "And Then There Were None." So if new social structures of mediation are to replace the mediating function of money, they must on the one hand be able to deal with restrictions on the available goods, possibly arising for ecological reasons, and on the other hand avoid surrendering the regulation of highly complex and global process chains to new fetish-like structures in the form of digital algorithms.

Money Is an Alien . . .

> *The idea that everything could have turned out differently takes our breath away.*
>
> Thomä 2007

Money is not part of human nature, but inhibits genuinely human relationships and forms of society. Hence the title chosen by the artists Chris Kondek and Christiane Kühl for their science fiction theater play *Unser Geld ist ein Alien* [Our money is an alien] (Becker 2010). The thought experiments presented here show that money is no longer needed to mediate processes based on the division of labor, if there is no longer any shortage of goods for the satisfaction of needs. There are two ways to achieve this: firstly frugality, and the inclusion of everyone in an effectively organized world of work, and secondly the boosting of commodity production through technological progress. The consumerism of the industrial age, both in its early days and at its height, put an end to frugality, but without yet allowing any surplus production. The abolition of money therefore scarcely featured in the utopian and fantasy texts of this period. Only Ernest Callenbach and Ursula le Guin raised the possibility of limiting the volume of production for ecological reasons.

Since the turn of the millennium, two trends have been clearly moving apart: on the one hand texts developing alternative utopias based on political movements, texts that seek to persuade more by arguments than by

entertainment, and on the other hand action-packed science fiction novels which increasingly also touch on economic themes. The utopian texts tend to illustrate traditional ideas such as a minimum income, and are thus not especially innovative, while the science fiction novels at least explore more recent trends from the virtual and high-tech world, but also show no creativity when it comes to creating new forms of society.

The reason why money or forms of mediation similar to money are still accepted in many utopias is undoubtedly that not all money is seen as serving to oppress other people. Marx also distinguished between a mere "monetary function" and money as capital, based on the class relations between the owners of the means of production and the doubly free proletarians: "But money appears very early on as a buyer of so-called services, without its being transformed into money capital, and without any revolution in the general character of the economy" (Marx [1867] 1978: 114). "As long as these operations are directed against money as such, they are merely an attack on consequences whose causes remain unaffected" (Marx [1939] 1973: 240).

Unfortunately, it has not yet been possible to eliminate either of these forms of money. Today we can no longer share the optimism of Bellamy, Bebel or Bogdanov, in whose work anticipated social and technological innovations raised hopes of a happy future. In view of the lost twentieth century, these disappointed hopes fill me with sorrow. The texts discussed here are often surprisingly haunting: perhaps things could have turned out differently . . .

References

Andraea, Steffen, and Matthias Grundmann (2012), *Gemeinsam! Eine reale Utopie: Wenningen 2015,* Osnabrück: Packpapier-Verlag.

Aristotle (1981), *The Politics*, trans. T. A. Sinclair, revised by Trevor J. Saunders, London: Penguin.

Banks, Iain M. ([1996] 1997), *Excession,* London: Orbit.

Bebel, August ([1878] 1910), *Woman and Socialism*, trans. Meta L. Stern, New York: Socialist Literature Company. Available online: https://www.gutenberg.org/files/47244/47244-h/47244-h.htm (accessed March 28, 2018).

Becker, Tobias (2010), "Unser Geld ist ein Alien", *Spiegel Online*, November 13, 2010. Available online: http://www.spiegel.de/kultur/gesellschaft/science-fiction-theater-unser-geld-ist-ein-alien-a-728845.html (accessed June 22, 2017).

Bellamy, Edward ([1888] 2007), *Looking Backward 2000–1887*, Oxford: Oxford University Press.

Bogdanov, Alexander ([1912] 1984), *Red Star: The First Bolshevik Utopia*, trans. Charles Rougle, eds. Loren R. Graham and Richad Stites, Bloomington: Indiana University Press.

Cabet, Étienne ([1840] 2003), *Travels in Icaria*, trans. Leslie J. Roberts, New York: Syracuse University Press.
Callenbach, Ernest ([1975] 1990), *Ecotopia*, New York: Bantam Books.
Callenbach, Ernest ([1981] 1982), *Ecotopia Emerging*, New York: Bantam Books.
Campanella, Tommaso ([1602] 2013), *The City of the Sun*, Gutenberg Project. Available online: http://www.gutenberg.org/files/2816/2816-h/2816-h.htm (accessed November 23, 2016).
Cullen, Steve (1996), *The Last Capitalist*, London: Freedom Press.
Cunis, Reinmar (1987), *Wenn der Krebsbaum blüht,* Munich: Heyne.
Del Antonio, Eberhardt ([1959] 1985), *Titanus,* Berlin: Das Neue Berlin.
Dillard, J. M. [Jeanne Kalogridis] (1996), *Star Trek: First Contact: A Novel*, New York: Pocket Books.
Doctorow, Cory (2003), *Down and Out in the Magic Kingdom*, New York: Tom Doherty Associates.
Holland-Cunz, Barbara (1985), "Frauen-SF oder Feministische Utopie?," in *Science Fiction Times*, 1/1985, 14–17.
Huxley, Aldous ([1962] 2005), *Island*, London: Vintage.
Jappe, Anselm (2011), "Has Money Become Obsolete?," trans. Al Evans, in Charles Eisenstein, *Sacred Economics*. Available online: https://charleseisenstein.wordpress.com/2011/11/03/has-money-become-obsolete/ (accessed March 28, 2018).
Joseph, Peter, Roxane Meadows, and Jacque Fresco (2009), *The Zeitgeist Movement: Observations and Responses: Activist Orientation Guide*, n.p. Available online: http://nvc.halsnet.com/jhattori/Zeitgeist/Movement/TheZeitgeistMovement.pdf (accessed March 21, 2018).
Kempin, Peter and Neuhaus, Wolfgang (2008), "Invasion der Cognoiden," in *Das Science Fiction Jahr 2008*, Munich: Heyne, 744–765.
Koman, Richard (2003), "Cory Doctorow's Bitchun' World: P2P Gone Wild," article on and interview with Cory Doctorow, O'Reilly Policy DevCenter. Available online: http://archive.oreilly.com/pub/a/policy/2003/02/24/perspectives.html (accessed June 22, 2017).
Le Guin, Ursula K. ([1974] 2001), *The Dispossessed*, New York: Eos/Harper Collins.
Leßmann, Bernd (1997), *Börsenkrach oder das Schlüpfen des Schmetterlings: Eine utopische Erzählung,* Magstedt: Selbstverlag.
Marx, Karl ([1867] 1978), *Capital*, vol. 2, trans. David Fernbach, London: Penguin/New Left Review.
Marx, Karl ([1939] 1973), *Grundrisse: Foundations of the Critique of Political Economy*, trans. Martin Nicolaus, London: Penguin/New Left Books.
Marx, Karl ([1875] 1983), "Kritik des Gothaer Programms," in Karl Marx and Friedrich Engels, *Werke* (MEW), vol. 19, Berlin: Dietz-Verlag, 11–32.
Marzin, Florian F. (1986), "Von der seligen Insel in den zukünftigen Staat: Versuch einer gattungsmäßigen Differenzierung zwischen Utopien—Voyages Imaginaires—Science Fiction," in *Science Fiction Times*, 2/1986, 9–18.
Memory-Alpha-Wiki, *Geld*. Available online: http://de.memory-alpha.wikia.com/wiki/Geld (accessed June 22, 2017).

Mercier, Louis-Sébastian ([1771] 1772), *Memoirs of the Year Two Thousand Five Hundred*, trans. W. Hooper, London: G. Robinson.
More, Thomas ([1516] 1965), *Utopia*, trans. Paul Turner, London: Penguin Books.
Owen, Robert ([1832] 1841), *Outline of the Rational System of Society,* London: Home Colonization Society.
Plato (1961), *Laws*, vol. 1, trans. R. G. Bury, Cambridge, MA: Harvard University Press.
P.M. (1983), *bolo'bolo*, [n.p.] [English translation]: anarchist library. Available online: http://sfbay-anarchists.org/wp-content/uploads/2015/04/bb_3.pdf (accessed June 22, 2017).
Rabelais, François ([1542] 2006), *Gargantua and Pantagruel*, trans. and ed. by M. A. Screech, London: Penguin.
Robinson, Kim Stanley ([1992] 2009), *Green Mars*, London: HarperVoyager.
Robinson, Kim Stanley (1999), *The Martians*, New York: Bantam.
Robinson, Kim Stanley (2012), *2312*, London: Orbit.
Rollberg, Peter (1988), "Nachwort," in A. Bogdanow, *Der rote Planet: Ingenieur Menni,* Berlin: Volk und Welt, 293–298.
Russell, Eric Frank (1951), "And Then There Were None," first published June 1951 in *Astounding Science Fiction*, vol. 47, no. 4. Available online: https://www.abelard.org/e-f-russell.php, (accessed September 29, 2018).
Skinner, B.F. ([1948] 1976), *Walden Two*, Indianapolis: Hackett.
Skinner, B.F. (1976), "Walden Two Revisited," in *Walden Two*, Indianapolis: Hackett.
Soboleva, Maja (2008), *Wissenschaftliche Ideen Aleksandr Bogdanows,* Rosa-Luxemburg-Stiftung Workshop "Total verplant," Berlin June 26, 2008. Available online: http://www.rosalux.de/fileadmin/rls_uploads/pdfs/Themen/Wirtschaft/Bogdanov-_total_verplant.pdf (accessed June 22, 2017).
Sonntag, Michael (1999), *"Das Verborgene des Herzens": Zur Geschichte der Individualität,* Reinbek: Rowohlt.
Star Trek IV: The Voyage Home (1986), [Film] Dir. Leonard Nimoy, USA: Paramount Pictures.
Star Trek: First Contact (1996), [Film] Dir. Jonathan Frakes, USA: Paramount Pictures.
Stross, Charles (2005), *Accelerando*. Available online: http://www.antipope.org/charlie/blog-static/fiction/accelerando/accelerando.html (accessed March 28, 2018).
Stross, Charles (2007), "Wenn mir morgen die Ideen ausgehen, könnte ich trotzdem noch 10 Jahre lang Bücher schreiben!," interview with Charles Stross by Uwe Kramm, *Das Science Fiction Jahr 2008*, Munich: Heyne, 524–542.
Suarez, Daniel (2010), *Freedom™*, London: Quercus.
Thomä, Thomas (2007), "Welt ohne Regenschirme," *Neue Zürcher Zeitung*, August 6. Available online: http://www.nzz.ch/welt-ohne-regenschirme-1.537053 (accessed June 5, 2016).

Part 4

Mediation After Money

4.1

A Critical View on the Criticism of Money

Christian Siefkes

The idea of a world entirely without money is undoubtedly appealing, precisely because such a world would be in complete contrast to our everyday experiences. In the following discussion I will subject this idea to critical scrutiny. I begin with a brief look at the role of money in earlier, non-capitalist societies. This is relevant because many radical critiques of money—and of related phenomena such as exchange and markets—appear to be based on the idea that these phenomena were either unknown outside capitalism or only played an unimportant part. In the following sections I turn to the future, discussing possible ways of organizing distribution and production without money and exchange—with a critical reflection on the difficulties and limitations that would arise from such approaches.

My perspective on the possibility of a world without money has changed, partly in the discussion process accompanying the genesis of this book. While I used to see it as a desirable and essentially feasible utopia (e.g. Siefkes 2013), I now see fundamental problems, for which—as far as I can tell—there are as yet no convincing solutions. At the same time, critiques which regard the abolition of money as a *necessary* element of a better society now strike me as analytically false or in any case not sufficiently justified, since they wrongly consider specific functional principles of money and exchange within capitalism as universal—as necessarily linked with money and exchange.

1. Is Money a Fundamentally Capitalist Phenomenon?

The idea of a "post-monetary society" implies that money is a historical phenomenon of limited duration. All the tools (in a broad sense) used by humans have come into being at some point in time. In principle it makes sense to think about the circumstances in which they might disappear again in the future, and whether something else would then take their place, or whether their function would become completely superfluous. We could, for example,

speculate about a "post-car society," in which the function that is partly fulfilled by automobiles today (the transport of people and things) is completely taken over by other kinds of vehicle (e.g. trains, bicycles and drones). But we would also have to justify why we believed such a development was plausible.

Even more speculative would be an imagined "post-vehicle society," in which *all* kinds of vehicle (including aircraft) have disappeared because people and things move from one place to another in a different way—for example by "beaming," a notion popularized by *Star Trek*. The main reason why this is speculative is that it is totally unclear today whether such technologies can be developed at all, and if so, whether they would be sufficiently safe, practical and straightforward to make vehicles of all kinds obsolete.

If we are thinking about a "society after X," then, the first thing we need to clarify is what exactly we mean by X, and the second is why and in what circumstances we expect X to disappear one day. To answer the concrete question of what might be meant by money, it is helpful to begin by consulting a standard reference work such as the Gabler Wirtschaftslexikon (2017): "Money is the generally recognized means of exchange and payment which a society has agreed on."

To my mind this definition is good enough to work with. It stipulates that any "generally recognized means of exchange and payment" is money. A post-monetary society would therefore not be a society in which today's money (dollars, euros etc.) is replaced by *another* generally recognized means of exchange and payment. Instead it would no longer need any means of exchange and payment at all (or in any case no generally recognized ones).

Not every society thought of as money-free fulfills this requirement. In a "reputation economy" such as that imagined by Cory Doctorow,[1] reputation is acquired in a different way from money today, but it is also used to acquire concrete and useful goods, and thus assumes the role of a general means of exchange and payment.

The dictionary article quoted above does recognize money as a phenomenon of limited historical duration, but seems to posit exchange as more or less universal:

> The *transition from the barter economy to the monetary economy* began with what was initially a local custom: dividing the previously simultaneous exchange of two goods or services into separate processes of buying and selling by agreeing on an intermediary exchange good (Zwischentauschgut).

[1] For utopian literature see Schlemm in this volume.

According to this ahistorical notion, humans have always exchanged the things they produced, evidently independent of one another; money then emerged as a clever "custom," facilitating these acts of exchange by using a generally accepted "intermediary exchange good."[2] Just as false as this ahistorical idea of a pre-monetary barter economy (which only became truly practical after the "switch" to money) is the opposite belief: that people in pre-capitalist societies generally managed their economic affairs happily and without money, and that money and markets only became widespread with the worldwide triumph of capitalism. This idea is seldom explicitly expressed, but seems to underlie many a radical critique of capitalism.[3] In order to better understand the historical role of money and markets, it is vital that we take a closer look at non-capitalist modes of production.

1.1 Money, Exchange and Markets in Subsistence-Oriented and Peasant Economies

The economic anthropologist George Dalton—a student of Polanyi, who can hardly be suspected of an uncritical generalization of capitalist conditions—observes: "[E]very society . . . has an economy of some sort because personal and community life require the structured provision of material goods and services" (Dalton 1971: 25). This process is never left to chance, because if it worked too poorly (or did not work at all) this could soon lead to hardship and death (ibid. 31).

In this sense, then, it makes sense to speak of an "economy" even in relation to pre-capitalist or non-capitalist societies, referring to this structured process of provision for present and future needs. The process exists in every society, but it is only in capitalism that it takes the particular form of a multitude of private, competing firms, aiming to maximize their profits.

Dalton (1971: 31f.) also notes that not all but most economies have external trade, markets, certain forms of money, and some kind of accounting devices—so much for the idea of money as a specifically capitalist phenomenon. But at the same time, he stresses that these institutions are often only superficially similar: it would be quite wrong to conclude, from the mere fact of their existence, that such (often quite diverse) economies "basically" function in the same way as today's economy. This is a rejection of both neoclassical economists with their inadmissible generalizations, and

[2] For criticism of such ideas see Lohoff and Aufderheide-Kohl in this volume.

[3] As Habermann (2014) writes: "Without capitalism [we need] no financial markets, no paid employment and no money." This suggests that the three phenomena mentioned derive their justification for existence purely from specifically capitalist processes, and therefore do not play any substantial role either before or after capitalism.

critics of the market and capitalism, who see markets, money and accounting as unmistakable characteristics of the specifically capitalist mode of production. While there are clear differences between different modes of production, these are more subtle than we might think. One difference is that in subsistence-oriented economies external trade is only used for the import of goods that are not available locally, while in the capitalist global economy it is based on the principle of cost minimization (the least-cost principle; Dalton 1971: 58).

Another key difference is that traditionally, in subsistence-oriented economies, only produced material items are offered for sale in markets. There are no markets for labor or land, or such markets only play an insignificant role. Most people are not dependent on successful market transactions to secure their livelihood; instead this is ensured by subsistence production in the framework of small groups (ibid.).

In capitalism, individuals, households and firms are faced with innumerable choices: which of the countless goods they should buy, what occupation they should specialize in, what kinds of goods they should produce, and what technologies they should use to do so. Many of these choices take the form of monetary calculations, or these at least play a certain part (Dalton 1971: 78). In subsistence economies, on the other hand, the choices are much more limited—because people mainly produce for their own use, and because the existing ecological and technological conditions, with a low level of technological development, often present few options. But even if alternatives are imaginable, they are usually not explored, because there are precise conventions about what is customary, from which individuals do not deviate. This is because it would disconcert the people around them and might make it impossible to fulfill social expectations (e.g. about providing for relatives; ibid.).

Furthermore, traditional economies are mostly on a very small scale: just a few hundred or a thousand people are closely linked in their economic interactions. True, there is often also external trade, or ritual relations of exchange with external groups, yet these are only of secondary importance. These economies are also "small" in terms of the very limited number of goods produced. Often one or two essential types of goods (e.g. sweet potatoes or cattle) play a central role in people's lives; these are produced in subsistence production within a village or an extended family ("lineage"). They are supplemented by a few dozen other kinds of goods or services which are only occasionally needed and are if necessary procured from specialists (Dalton 1971: 90).

Dalton (1971: 95) describes another mode of production as "traditional peasant economy"; this includes, for example, European agriculture in the

Middle Ages, and the Russian *mir* (village community). Here subsistence production for personal use and production for the market coexist. Many people earn a substantial proportion of their livelihood by selling things in the market. Land, labor, tools, and other means of production can also be bought or hired for payment, though these specialist markets are usually limited. Most families work their own land and make many of their tools themselves; wage labor exists, but most people are not wage laborers. Since hardly anyone is solely dependent on the market to secure their livelihood, the fierce competition for market shares is absent, as is the need to produce as efficiently as possible and to sell as much as possible.

Both in traditional peasant economies and in subsistence economies, then, products are traded, but factors of production such as land and labor are not traded, or only sporadically. Markets exist, but are not used as universally as in capitalism. Instead land is often distributed according to principles of status. This is traditionally the case, for example, in many African Bantu societies, where every household is entitled to a certain amount of land. This land can be lent but not sold; if the household gives it up, it reverts to the community. The right to the labor of others is not usually gained by employing wage laborers, but by way of kinship (family members join in the work) and reciprocity (for big projects, all the families work together; Dalton 1971: 127f.).

Traditionally, markets were only of secondary importance in Africa; the majority of production was organized by means of reciprocity and redistribution (Dalton 1971: 134). This distinction between different principles of production has its origins in the work of the economic historian Karl Polanyi ([1944] 2001), who differentiates between *market exchange, redistribution,* and *reciprocity.* Redistribution means that a central political authority demands certain contributions, and then distributes the resources gathered in this way in accordance with political decisions. Usually all these principles (or at least two out of three) play a part in the organization of society, but different societies vary in terms of how the principles relate to each other, and which of them is dominant. Today market exchange dominates, but tax-funded public services (schools, fire departments, the military, social welfare) are based on the principle of redistribution, and private households work on the principle of reciprocity.

Here reciprocity must not be confused with "voluntariness"; instead it is based on clear social rules (Dalton 1971: 27, 53). Even today, if someone has given us a birthday present, it is difficult to imagine going to their next birthday party empty-handed, or if someone has helped us move to a new house we cannot refuse to help with their next move, unless there is a good reason.

As there were markets for certain products in many societies, without market exchange being the socially dominant principle, Dalton (1971: 144) distinguishes between market places on the one hand, and the market principle or market mechanism on the other. Market places are specific locations where things are bought and sold, while the market mechanism ensures that nearly everything—including labor and raw materials—is traded at market prices, regardless of particular locations. While a weekly market is a specific place, the "labor market" is a social institution.

In feudal Europe there were markets (especially in the towns) for some types of products (especially foodstuffs), but there was no market principle; land and labor were seldom sold. Instead land was made available by redistribution in relations of dependence: feudal lords granted their vassals land for farming, and demanded contributions—in kind or in labor—in return (Dalton 1971: 223). In general the vassal had a lifelong right to farm the land, as long as he paid the contributions demanded, and he could hand this right down, but not sell it. Access to labor was based on the principle of reciprocity: the whole family joined in the work, and on special occasions such as the harvest, all the families helped each other out. Occasionally day laborers were hired, but this tended to be the exception (ibid.: 226f.).

Nonetheless, market places can be very important for buyers even in societies where the market principle plays only a secondary role, because there are some goods they can only acquire on the market (Dalton 1971: 150). So it would be wrong to conclude that, without the market principle, market places and paid transactions were an unnecessary extra.

External trade was another form of exchange that has existed in practically every society, regardless of whether markets and money otherwise played a role in society. In pre-capitalist Africa, for example, external trade was often carried out by the "states" or political rulers; there was no market, strictly speaking, as there were no independent buyers and sellers. Often goods were exchanged for other goods, as there was no universal money that both sides would have recognized (Dalton 1971: 154). In this respect, external trade did actually correspond to the "barter economy" conjured up in the economics narrative, yet this is only a small, albeit essential segment within modes of production that were otherwise governed by different rules.

1.2 Non-Capitalist Monetary Economies

While Dalton is mainly concerned with highly subsistence-oriented societies with a low degree of differentiation in the division of labor, there are societies which already attained a high level of division of labor thousands of years ago, and in which many people lived in cities. (Cities are places where no

subsistence-oriented food production is possible, so this area, which is crucial for survival, has to be organized differently.) Examples are China and the Roman Empire.

A good insight into Chinese society before the emergence of capitalism can be found in the classic Chinese adventure novel *Outlaws of the Marsh* (English translation: Shi and Luo 1988). This novel, written in the fourteenth century, is set in the twelfth century. Even if the plot is fictional, the book probably paints an accurate picture of the mores of society at the time. It describes a society in which there are markets, taverns and inns, landlords, street vendors, and prostitutes.

There are, however, no capitalist entrepreneurs, focused on turning money into more money. On the contrary, the "important" characters whose stories make up most of the plot are officials (almost all male), who are paid by the state and acquire additional wealth from bribery, or robbers, who have their own strictly hierarchic chain of command—a kind of unofficial state against the state. Wealth (and its augmentation) is important, but no self-respecting person would establish or invest in a business to increase his wealth. The most highly esteemed characters are rich, but do not hold on to their money; they spend it liberally to help all those in need (cf. e.g. Shi and Luo 1988, vol. 1: 280).

1.3 Money and Markets Do Not Add Up to Capitalism

This short historical retrospective shows that money, markets and capitalism are by no means as closely linked as radical critiques of capitalism sometimes suggest.[4] This is also emphasized by the Marxist historian Ellen Wood (2002, ch. 4), who points out that trade and money can be found in many pre-capitalist societies. Wood argues, however, that capitalist structures only emerge when the compulsion to compete against others and to underprice them whenever possible takes hold. Money and trade played a major role in medieval cities too, but as prices and the right to practice a trade were regulated by guilds or the government, it was neither possible nor necessary to defeat one's competitors.

Andreas Exner (2010) rightly points out the distinction between "economies with markets" (in the sense of marketplaces) on the one hand, which have a long history and take many forms, and "market economies" on the other. It is only in the latter that nearly everything is bought and sold, especially most people's labor and a large proportion of the usable land; in other words, it is in the latter that the market principle is predominant. So far

[4] See footnote 3.

there has only been one form of market economy in this broad sense, the capitalist market economy. In this respect we can agree with Exner's statement that "market economy and capitalism go together."

But a society without money would logically be one without marketplaces: money and markets (in both senses of the word) would have to disappear completely. Here the historical retrospective gives rise to skepticism, since money, marketplaces and other forms of exchange (such as regulated external trade) *have* played a certain part in most societies so far. At the same time, the retrospective shows that there are numerous other possibilities between the two extremes: a capitalist market economy on the one hand, and societies with no money or markets on the other. A statement such as "anyone who wants to overcome capitalism (and its brutality) must also renounce money and markets" creates a false dilemma, and conflicts with the real diversity of possible means of production which can be imagined, or have appeared in the course of history.

Critiques of money-based economic activity are also often premised on the idea that things which were possible in the past could work again in the future. Thomas Herzig (2011) declares, for example: "For a start, the moneyless society is not a utopia. It has functioned sustainably for most of the time since *Homo sapiens* appeared around 160,000 years ago." Such ideas are not only imprecise, they are also based on conditions that differ dramatically from the current situation. For example, the population density used to be much lower. True, capitalism today is not able to provide "sustainably" for seven billion people: many lack the bare necessities, while at the same time the earth is being systematically overexploited. But earlier societies, especially the hunter-gatherer cultures which were in fact money-free, needed many times more land per person than the amount that is now available. So a direct return to pre-capitalist modes of production is unthinkable, since the seven billion people are not simply going to disappear.

Another substantial difference is the vastly increased complexity emphasized by Dalton (1971). On the one hand, this includes the numerous manufactured goods (commodities) that people can consume, as long as they are able to pay. On the other hand, it includes the highly differentiated division of labor, which has brought forth a multitude of different occupations. Today this complexity is mediated by money: everyone can decide for themselves what they will consume, but only as long as they are able to pay for it—money is the primary means of distribution.

At the same time, money plays an essential role in the production process: firms produce in order to make profits, that is, to turn money into more money, and people go to work in return for payment. Despite all the ideological glorification of work as something that gives meaning to life,

most people are probably aware that they mainly work in order to earn money.

In a money-free society, production and distribution would have to be organized in completely different ways. But how could this work, and what would be the consequences? In the following discussion, both aspects—production and distribution—will first be considered separately, though of course they are obviously not independent of one another. I will start with distribution, although it might seem to be of secondary importance, because the discussion of possible modes of distribution shows up problems that are not discernible when we focus on production.

2. Distribution Without Money?

Today the distribution of many goods works via money. If we want to acquire a good we pay the price set for it and gain access to it in return. Sometimes we acquire full property rights, including the right to sell on the good to others as we see fit, at a freely negotiable price; sometimes we only secure limited rights of use. How could all this work without payment?

One possibility is "taking what you need"; here there are two alternatives, depending on how "need" is defined. Does every person decide subjectively, as he or she sees fit, or is need defined by social institutions, according to objectively formulated criteria? In the latter case, this is distribution according to socially defined need. Today, for example, statutory health insurance in Germany and other European states mainly works this way. Medically necessary treatment which has been prescribed by a doctor is paid for by the health insurance fund, and thus the cost is shared by all those insured; the person receiving the treatment pays little or nothing.

If, instead, everyone can make their own subjective choices, then the prevailing principle is "help yourself" or "take what you want." Today, for example, access to public parks and streets works in this way. This model sounds ideal from a "communist" perspective, but has the obvious disadvantage that it only works if there is enough of the good in question to satisfy everyone's need for it. This leads to the question of money-free production, which I will return to later. But regardless of the concrete mode of production, it should be clear that in the case of material goods and services it would probably not be possible to avoid a demand surplus at least in some cases (a demand surplus arises when the number of people wanting to use a particular good, made available at a price of zero, exceeds the quantity of the commodity that is available). The finite nature of the earth and its resources makes this a given.

Things are different for information products: as soon as these have been created, they can in fact be shared with any number of users, with very little additional use of resources. Thus the "help yourself" principle appears to be the appropriate mode of distribution for information products, though admittedly this does not answer the question of how they are to be produced.

But how can material goods and services be distributed if there is a demand surplus? One possible way to solve this is to leave it to the producers to decide who will have the available goods. In this case, the producers could for example sell the goods to the potential customers who are most willing to pay—but this would be the money-based solution, which is out of the question for a post-monetary society.

Another option would be for the producers to produce mainly for themselves, for their collective personal use. Only if something is left after this is it distributed to others. This would be a return to subsistence production. Post-capitalist subsistence production would differ radically from the pre-capitalist version, however, since it would undoubtedly make use of many of the technological possibilities that exist today. I therefore refer to it as "high-tech subsistence" (cf. Kratzwald 2014: 122). While in traditional subsistence production the main things produced were food, clothing and housing, high-tech subsistence production would also be able to produce many other goods, thanks to modern production methods such as 3D printing. But it would also have to be able to reproduce these modern production methods themselves in a completely decentralized way.

These days I have my doubts about whether subsistence production in small groups can be a desirable basis for a post-capitalist society. Of course it is possible that such a scenario may come about (whether desired or not), if the highly networked and extremely complex capitalist mode of production experiences a catastrophic collapse, and small groups of "survivors" have no choice but to fall back on their own, local resources and skills. Whether there would then still be computers and reliable sources of power, the essential prerequisites for high-tech solutions such as 3D printers, is doubtful: a "post-collapse society" (Heimrath 2012) would probably be forced to return to low-tech subsistence.

But even if high-tech subsistence were still an option, production in small groups—which can organize themselves spontaneously and without money—would probably leave much to be desired. And in the case of cooperation in large groups, the question that again arises is: "How does the division of tasks and goods function without money, compulsion, or excessive bureaucracy?"—a question that is still relatively easy to resolve in small-scale subsistence production.

While high-tech subsistence could produce a much greater range of products than has traditionally been possible, such groups are unlikely to even come close to the range of products available under capitalism. A miraculous machine that can produce "anything" at the touch of a button, without requiring either precursor goods that are hard to obtain, or work-intensive finishing, does not yet exist, and is unlikely to exist in the foreseeable future. Furthermore, 3D printers and similar machines which are of interest for decentralized high-tech subsistence have so far mainly proven valuable for the production of prototypes and individualized single items. When products are needed in greater quantities, industrial mass production is still the more efficient option.

Thus the subsistence perspective, even in its high-tech version, seems set to remain a "second-choice" way of life: anyone who is still able to find a reasonably well-paid job in capitalism is likely to see the great range of cheaply manufactured mass-produced goods as more attractive. Only people wishing to "opt out," and those who can no longer make a living in the capitalist labor market, might see a more or less high-tech subsistence production as a way out, albeit one that would demand considerable self-denial and less efficient "DIY" production. In order for a post-capitalist way of life to become widespread, however, it would have to be attractive enough to win the favor of the majority of the population, who still see capitalism as quite acceptable.

This condition would probably only be fulfilled if post-capitalist society could also, in many cases, produce things in great quantities and with a high degree of division of labor, and if the producers were willing to use only a small proportion of the goods they produced themselves. Which brings us back to the question of the "money-free" distribution of the remaining goods.

One conceivable version would be a system of nepotism or cronyism: the producers decide who will receive their products on the basis of personal acquaintance and favor. In such a society, personal relationships would be everything; a loner or misfit would remain poor and probably die early, because the relatives and acquaintances of the doctors and nurses would be given preferential treatment in hospitals. So society would certainly not be improved if money were replaced by personal relationships!

This leaves other variations in which the producers do not decide as they see fit, but products are instead distributed on the basis of a general system negotiated within society. Just as a reminder, we are only talking about how a demand surplus is dealt with: those cases where somebody would end up empty-handed if everyone were simply to help themselves. Various "money-free" solutions to this problem could be found, for example:

- First come, first served (FCFS): everyone can help themselves to all available products; but if the shelves are empty, you are out of luck.
- Distribution by lot: anyone who wants to have a particular kind of product puts their name on a list; lots are then drawn to distribute the available goods among those on the list.
- Rationing: for each scarce product category, those responsible determine exactly who is allowed to consume how much of it, so ideally no one ends up empty-handed.

Although all these methods are fundamentally fair, none of them is altogether convincing. FCFS causes stress, because for every potentially scarce commodity one has to be sure to be on the spot at the right time, when the next distribution is due to happen. Furthermore, the method is susceptible to nepotism or cronyism, with insiders passing on information to friends and acquaintances about when something will be distributed.

Distribution by lot is totally arbitrary and also susceptible to manipulation. It is possible to increase one's own chances by asking friends to apply for the desired good as well, and to pass it on if they win. And the rationing process would force everyone into the same mold, without taking into consideration the divergence between individual needs.

Furthermore, all three methods would probably lead to the emergence of a black market, via which people who have received one of the scarce commodities would sell it on to those who received nothing. Even if there is officially no money, a suitable reward or return gift would no doubt be found, leading to barter trade, or one of the scarce goods would take on the role of a black-market currency. Even if such black-market transactions were illegal, it would not be possible to prevent them altogether in a non-totalitarian society.

Algorithmic rationing, as conceived by Stefan Heidenreich,[5] would not necessarily be any better. Heidenreich's proposal involves "intelligent" computer programs, which decide who receives what goods. Unlike the above-mentioned methods, not everyone is treated the same; instead different people have individually differing entitlements to goods. On the one hand this allows different needs to be assessed better than in the case of a strict rationing system. On the other hand, people would be giving up control of major aspects of their lives to computers. Even if Heidenreich stresses that the algorithms used must be the result of democratic debates, the individual loss of sovereignty would nonetheless be scary.

Furthermore, the distribution algorithms in such a society would have power which even dictators could only dream of. This raises the question of

[5] In this volume.

who will control the programmers who create these algorithms, or (in the case of self-learning algorithms) at least their basic framework, and how hackers can be prevented from manipulating the algorithms to their own advantage. Moreover, self-learning algorithms are generally a "black box": even their programmers cannot reconstruct in detail *why* an algorithm has made a particular decision. If the decisions of the algorithms were to lead to suffering or obvious injustices, it would therefore be difficult to intervene and correct them.

This short critical overview of money-free distribution methods shows that the supposed cure is not necessarily better than the disease. Of course markets and prices have serious disadvantages, in their capitalist version in any case. But the same goes for the attempts to do without them, and besides, the market would probably creep back in surreptitiously.

These disadvantages could only be avoided in a genuinely affluent society, in which there was enough of *every* good to satisfy all demands, even if it was given away at a price of zero. But as stated above, a universally affluent society is not a realistic prospect for the foreseeable future, at least as long as humanity remains on earth, with its finite resources.

So perhaps a price system is not a bad idea, at least for some of the goods that are not available in abundance? Certainly not for all goods: for some things, such as comprehensive medical care, distribution according to socially defined need makes more sense. And other methods such as FCFS, distribution by lot, and rationing may occasionally be justified. But since all of these methods have their disadvantages, a social debate about this is needed. There is no generally "right" answer, and in some cases a majority of people would probably, with good reason, favor the use of a price system for the distribution of goods.

3. Moneyless Production

I understand production in a broad sense, as in Dalton's definition (1971: 25), encompassing the provision of necessary and desired activities and goods. In this sense, cooking food at home or putting the children to bed is also production, just as much as installing software on a computer or manufacturing the computer.

When it comes to the question of how things are produced, we must first distinguish between production for personal use, in an extended sense, and production for "general others." Here production for (extended) personal use means for oneself and for relatives and acquaintances—for people one has a personal relationship with. If I cook for myself or my family, or fix a friend's

bicycle, this is production for (extended) personal use. If I assemble a bed or a computer without knowing who will later use it, this is production for general others. Production for general others can also take place when those who will benefit from the production are personally known to the producer, but she or he has no personal relationship with most of them beyond the production process. Plumbers, hairdressers, and most other service providers meet their customers, and in some cases they become good friends with them, but as a rule the personal relationship is not essential for the performance of the service.

Today production for (extended) personal use is usually unpaid, and that for general others is usually paid, but this is not always the case. Someone who volunteers at a soup kitchen or *Volxküche* ("people's kitchen"), produces for general others without payment, and conversely, even among close acquaintances payment may occasionally be arranged for regular activities such as tutoring or babysitting.

Production for (extended) personal use is an important part of the production process in every society, which is often undervalued and tends to be "forgotten"—a fact that is rightly lamented, especially by feminists.[6] From a historical perspective, this mode of production was dominant in subsistence-oriented economies: subsistence production is production in fairly small groups for collective personal use, which can certainly be understood as production for (extended) personal use, since the group ensures that there are at least loose relationships between all of its members.

3.1 The Dunbar Limit

Of course this is the limitation of subsistence production, as mentioned above: since it is based on personal relationships, it mainly works on a small scale. I will refer to this as the "Dunbar limit," after the "Dunbar number" identified by the anthropologist Robin Dunbar, which indicates the number of people with whom someone can maintain personal relationships. Typically, the Dunbar number is stated to be "around 150," though it can vary individually between around 100 and 250.

Groups that are strongly oriented toward subsistence and production for collective personal use, and which dispense with forms of mediation such as money or distinct social hierarchies, almost never exceed the Dunbar number. Nomadic hunter-gatherer cultures—the oldest form of society in the history of humanity—live together in groups that rarely have more than 50 people. Modern intentional communities such as Twin Oaks in

[6] Kratzwald (2014) and Habermann (in this volume).

the US and the Niederkaufungen commune in Germany seldom exceed 100 members. Those among the community-supported agriculture (CSA) projects that spread costs among groups of subscribers in a solidarity-based, self-organized way (instead of charging everyone the same amount), rarely have more than 150 shares (a share can belong to more than one person, for example a family, but this does not have any direct impact on the structure of the project). Lars Heitmann[7] also shows that projects which attempt to largely or completely dispense with money only very seldom exceed the Dunbar limit. The same goes for the "peninsula" projects described by Friederike Habermann (2009).

In my opinion this is no coincidence. Smaller groups are able to forego fixed prices and other mechanisms for linking individual contributions (costs) and usage, because they are manageable enough to agree on all the necessary decisions in direct communication.

Beyond the Dunbar number—in groups with several hundred, several thousand or more members—direct communication of everyone with everyone else quickly becomes impossible, and no group member can still maintain personal relationships with all the other members. But such larger contexts beyond the Dunbar limit are likely to remain essential for the organization of production processes.

3.2 Central Planning?

When it comes to producing for general others, beyond one's personal acquaintances, a further distinction can be made between *centralized* and *decentralized* coordination. *Central* does not necessarily mean the whole world or a whole country, but it does mean that there is a production plan for society as a whole in a particular geographical area, a plan that makes binding provisions for all the inhabitants of this area and their rights (to take and use goods) and obligations (to contribute). Such a production plan could certainly be created democratically. Based on everyone's wishes regarding consumption and production, a production plan for the whole society could be created, attempting to reconcile the different wishes as well as possible, and allocating each person their place in the production process. This could then be put to a vote; only after passing the vote would the plan be implemented.

Whether this would be practicable is a matter of doubt.[8] But even if it were feasible, such a central planning process would give no freedom to individuals. If it wanted to replace money as an instrument of mediation, it would have

[7] In this volume.
[8] Cf. Kathöfer and Schröter in this volume.

to fix both the tasks (obligations) and consumer options (rights) of every person, without each person necessarily agreeing with it. (It would be virtually impossible for a complex society with tens of thousands or millions of members to reach any decision that is not completely trivial by *consensus* among all its members.)

3.3 Decentralized Coordination and Reciprocity

In the case of *decentralized* coordination, on the other hand, individuals decide what they want to do and consume/use, without having to agree on this with everyone else. Production for general others organized in a decentralized way means that individuals or organizations produce goods for other people or organizations; another possibility is that the members of an organization produce collectively, but only for themselves. If we disregard this last case scenario for the moment (I will return to it under the heading "commons"), then the producers and beneficiaries of production diverge here. The question is then whether reciprocity (recompense) is explicitly arranged, implicitly expected, or not expected at all.

No reciprocity is expected, for example, by charities, or in the case of hobby and leisure activities whose results are made freely available to others (for example when an amateur choir invites people to a free concert). The same goes for acts of helpfulness towards strangers. For presents and favors between friends, on the other hand, it is *implicitly* expected that this will be reciprocated at a later date, even if we would never explicitly state this or "enforce" this claim. If we have helped a friend to move to a new house, we are disappointed if she later refuses to help us move without giving any reasons.

Explicitly agreed reciprocity is the predominant mode in capitalism: here two parties agree on a contract which stipulates performance and reward. The transaction only takes place if the two sides are able to agree. If one side does not keep to the contract that has been negotiated, the other can enforce the claim (if necessary in a court of law), or demand that what she has paid or given be returned to her. Explicitly agreed reciprocity, however, does not necessarily have to involve a "legal process"; instead of an enforceable contract, it is possible to imagine, for example, an understanding reached in front of witnesses. In this case, a participant who breaks the deal without good reason would at least be exposed, and might find it harder to reach such understandings with others in the future. I will use the term "agreement" as an umbrella term for both: contracts with a legal process, and understandings without one.

Ancient Roman law distinguished between three kinds of contract (or, in more general terms, agreement):

1. *do ut des:* I give so that you may give, e.g. sales contracts, tenancy agreements or loans (one party gives a certain amount of money, the other later pays back a larger amount).
2. *do ut facias:* I give so that you may do (or, seen from the other side: *facio ut des*—I do so that you may give), e.g. employment contracts or service agreements.
3. *facio ut facias:* I do so that you may do: reciprocal obligations, e.g. a defense alliance (in which all parties commit to helping if one of them is attacked).

It should be noted that the first two forms of contract are asymmetrical, while the third is often, but not always, symmetrical (both sides agree to do the same things, e.g. to assist each other in case of need). The first form of contract may look symmetrical (both sides "give"), but only works if both sides give different things.

Money does not feature in the third kind of agreement, but is likely to play a part in the first two kinds. Some kind of "intermediary exchange good" (Gabler Wirtschaftslexikon) or "general equivalent" (Karl Marx) normally appears on at least one side as the thing that "I give" or "you give." Without money, such contracts can only include barter transactions, which are so inflexible in comparison to money-based transactions that they are only likely to be an option in exceptional cases.

3.4 Commons

Critics of this Roman concept of law will complain that it is incomplete: in particular, it lacks the concept of "commons," which refers to products and resources that are jointly produced, maintained and used, and to the manner in which they are produced and used. The management of traditional commons, which revolve around material resources (such as grazing land or an irrigation system) can be described as a fourth kind of agreement:

- We do so that we may receive.

While the Roman contract types distinguish between "I" and "you" (both parties incur obligations, but in general different ones, at least for the first two types of contract), in the case of the commons all those involved merge into a joint "we." Here too, the people involved have rights and obligations, but these apply equally to everyone. The "flows" of a commons system (for example the water from an irrigation system) are shared among all those involved in a jointly agreed manner, which ensures that nobody misses out. The costs are shared in a similar manner: for example, the parties involved take turns at performing certain tasks, and all the parties involved (often

families) take part in occasional stints of work maintaining or developing the commons by delegating one person of working age.[9]

Here obligations and rights are inseparably linked—traditional commons are not a "free lunch"; they too involve a kind of explicitly agreed reciprocity. The new, digital commons go a step further: they not only function in a money-free way (from the point of view of the user, in any case), but also forego the expectation of reciprocity. Everyone is permitted to read Wikipedia or surf the net with Firefox, without having to write articles or programming code.

Which of these productive options for interaction would still be possible without money? I would assume that the first two legal forms—"I give so that you may give" or "so that you may do"—would largely disappear. In exceptional cases these could still occur in the form of barter agreements (instead of money, specific useful goods are exchanged). But as soon as it comes to anything more than exceptions, it is likely that some form of money will appear (e.g. IOUs), because of its greater flexibility.

The most radical proponents of a money-free world assume that every form of explicitly or implicitly expected reciprocity will vanish along with money.[10] But even if implicitly expected reciprocity and money-free forms of explicitly agreed reciprocity continue to be seen as legitimate, I still have doubts as to whether asymmetrical agreements based on "I give so that you may give/may do" could be completely replaced if they disappeared. Symmetrical agreements as in traditional commons would be possible even without money, but are too inflexible in many cases. For example, traditional commons do not normally involve a division of labor in the sense of differentiation and specialization; all tasks are performed by all those involved, either pro rata or in turn.[11] In principle, a highly differentiated division of tasks is conceivable, but this requires considerable efforts at coordination, since all those involved must accept the differentiation as fair. Here the Dunbar limit once again comes into play: a few dozen parties may be able to reach individual agreements about who will take on what tasks, but when hundreds or thousands of people are involved this becomes impossible.

At the same time, even if contributions are individually differentiated, everyone has basically the same rights to take and use goods in a commons scenario: everyone is entitled to their share of the "flows" produced. And as a rule only very few kinds of products are distributed via a commons system—perhaps access to water, locally grown vegetables, or firewood. However,

[9] Cf. Ostrom (1990) for the analysis of various arrangements of this kind.
[10] Cf. Meretz in this volume for the question of "social obligations."
[11] Cf. Ostrom (1990: 49, 53f., 63, 65f.).

every person living in capitalism uses hundreds or thousands of different product categories, and there are substantial differences from one person to the next in terms of which products are used and how much. Some people like to travel a lot; some regularly drink cocktails or fine whiskey; some have pets that need to be provided for; many people eat meat, while others reject the consumption of meat or even that of any animal products as unethical; different people have completely different hobbies, and usually need various products to pursue these.

How could the same commons system satisfy all these different needs? There is only one answer to this: not at all. The number of "flows," and of contributions and participants required to produce these, would be much too large for all participants to agree on a uniform set of rules for the distribution of "flows" and duties. In order to satisfy such diverse needs in accordance with commons principles, people would therefore have to participate not in one but in a whole series of different commons systems—and thus also make the relevant contributions for each of them. This, however, would probably lead to a highly fragmented life structure, involving constant switching between different activities in very different contexts. The resulting diversity would probably appeal to some people, but might make others feel stressed and overwhelmed.

Some tasks cannot be dealt with in this way at all: a health commons, dispensing with specialist doctors and nurses and dividing all tasks equally among its members, would probably have a detrimental effect on their health. But employing professionals, who are paid and can therefore devote themselves to a single thing instead of having to participate in dozens of other commons systems, would contradict the paradigm of money-free production. A similar solution would be for different commons systems to agree to mutually recognize contributions to any one of them, as I proposed in *From Exchange to Contributions* (Siefkes 2008). This would not necessarily require money, but it would necessitate some unit of compensation very similar to money, which would make it possible to reduce contributions to a "common denominator" and make them comparable.

3.5 Renouncing Compensation and Implicit Planned Economy

But perhaps it would be possible to forego every kind of compensation, instead of continuing to use money or something very similar? Perhaps the doctor could devote herself to the health of others, while trusting that others will make sure she has enough to eat and a nice place to live, that her pets are also well fed, and that she can have an extended holiday twice a year?

This would mean, among other things, the disappearance of any explicitly agreed reciprocity. What is clear here is that explicit agreements could *not* be replaced by the implicit expectation of reciprocity on an individual basis, as is normal for presents and favors. Modern production processes are too complex for this: it is not only the doctor who contributes to a patient's treatment and recovery in a hospital, but also nurses and numerous other employees, who keep the hospital running, and all those who provide the necessary equipment, drugs, energy, water, etc.

When mediation is money-based, previously signed contracts ensure that all participants are paid, though often (as a critical aside) in a very unbalanced way. It is not necessarily the patient herself who pays; it may instead be a health insurance fund or the state, funding a health system which is free for users. It would quite obviously be impossible—and utterly overwhelming—if the patient were implicitly expected to give appropriate return gifts to *all* the involved parties.

At most, then, it is possible to imagine an expectation of reciprocity on a general social level (others do something for me, I do something for others, though generally not the *same* others), or alternatively, the renunciation of all expectations of reciprocity. In the latter case, people would only become active if they felt like doing something, or if they considered a task sufficiently useful and important.

From the point of view of producers, both these options sound good: they involve doing something for others, but deciding autonomously what and how. From the point of view of consumers, however, the complete renunciation of reciprocity creates problems, since this minimizes their influence on producers. When making a reciprocal agreement such as "I give so that you may give/do," I can always ensure that the conditions are right for me. If the terms do not suit me, I will perhaps find another provider who offers me better ones, or I can renegotiate and, for example, increase my own offer in the hope of better terms. If direct reciprocity is renounced, however, all that consumers are left with is the "hope principle." They can express wishes, but what the producers do with the (probably very numerous) wishes is entirely up to them.

This problem may seem less serious if we fall into the trap which I call *implicit planned economy*: the idea that it is *actually* already obvious what needs to be done in society as a whole, and that all we have to do is find, for each task, someone who will actually *do* it. Stefan Meretz[12] falls into this trap, for example, when he writes: "From a systemic perspective, it is irrelevant who makes the necessary contributions, as long as it is assured, on average,

[12] In this volume.

that it securely takes place." In fact, very little is "necessary" in complex societies.

Strictly speaking it is not even "necessary" for everyone to become as old as possible, though this is undoubtedly desirable; and there is virtually nothing necessary about the way people spend their days.

In money-based mediation, people decide for themselves what is desirable for them, not only as producers, but also as consumers and users. Someone who has a limited monthly budget can at least decide for herself how to spend it, beyond the "bare necessities." This individualization of decision-making options can be criticized, e.g. when parents have to pay for their children, and therefore, in comparison to people without children, have to do without certain things. But such injustices are linked with the actual *distribution* of money, not with the fact that it is used at all.

When money is used as a "flexible means of rationing," people decide for themselves what they see as necessary or desirable. Decision-making is decentralized, and lies with the different consumers or users themselves. In my view it can certainly be argued that this is better than leaving it in the hands of the producers or a central authority. Producers can survey people's wishes, but they cannot know how important people's different wishes are to them. If, on the other hand, I have my own budget, I can decide what I will allow myself to have immediately, what I will postpone having (and perhaps save up for), and what I can do without altogether.

3.6 Stigmergy and Self-Selected Teams

A concept occasionally mentioned as an instrument of mediation to convert decentralized wish lists into useful products is "stigmergy."[13] In brief, stigmergy means that people leave suggestions or cues about what could or (from their point of view) should be done, and other people, to whom a certain suggestion makes sense, and who see themselves as having the relevant skills, then implement this suggestion—without anyone forcing them or paying them to do so. Probably the biggest and most impressive example of stigmergy is Wikipedia. Never could the makers of traditional encyclopedias such as the *Encyclopedia Britannica* have dreamt that a group of unpaid amateurs would destroy their business model! Yet the remarkable success of this stigmergic self-organization depends on very specific conditions, which cannot be created for most production projects. The secret of Wikipedia's success is that all the countless suggestions for possible improvements and expansions can be dealt with *separately*. Whether I am

[13] See Meretz in this volume.

correcting a spelling mistake in an article, searching for and adding missing sources, rewriting badly written or non-neutral paragraphs, or starting completely new articles, I can do so at any time, without being reliant on any specific preliminary work by others. Every possible change is "atomic"; it has no other prerequisites than the existence and availability of Wikipedia itself.

For most material production processes, the situation is quite different: here a whole series of preparatory steps are usually necessary. In order to assemble any material thing—be it a bicycle, a Wi-Fi router or a sofa bed—*all* the necessary parts must first be present; all the necessary tools and resources must also be present, and a suitable workshop or manufacturing environment must be available. If even just *one* of the dozens or hundreds of elements needed is missing, then the production process cannot begin, or will fail. Conversely, it makes little sense to produce individual components and precursor products without knowing whether they will be used anywhere. It becomes even more difficult if the good or its precursor products do not have a long shelf-life, or if living creatures play a part in the production process.

In the vast majority of material production processes, then, the "atomicity" of the necessary tasks is not given: most tasks are dependent on various other tasks, which must be carried out shortly before, shortly after, or in parallel.

A further key factor in the success of stigmergic self-organization is that no lasting damage is done if individual tasks are completed badly or incorrectly. In Wikipedia, inappropriate or malicious changes can quickly be reversed by others. Similarly, free (or open source) software often involves stigmergic changes carried out by all those who feel called to develop the software. But there is always a core team or maintainer who has the last word and reviews all the proposed changes before incorporating them into the software (or not, as the case may be). This means that users only have to trust the core team or maintainer, but not the potentially large number of other people who have contributed to the development in one way or another.

In general, it is a characteristic of successful stigmergic projects that contributions can be made *first*; it is only *afterwards* that they are checked to see whether they are harmless and can be included long-term. Many activities have an immediate effect, however, and their consequences can no longer be undone. Few patients are likely to put their trust in a hospital whose nurses and operating teams work on the principle of "There's work to be done here: any volunteers?" The harm that they could do, due to inexperience, carelessness or malice, is simply too great.

There are alternatives to stigmergy, which leave behind some of its limitations and are nonetheless based on the voluntary, non-contractual "self-selection" of participants. Voluntary teams can come together and take care of certain operations on a voluntary or honorary basis, be they hospitals,

farms, or software programs. The above-mentioned "core teams" of many free software projects function on the basis of this principle (though admittedly they are not always unpaid). The potential users can develop trust in such teams, and can test their competencies, and such teams can also implement larger projects, which cannot be subdivided into numerous atomic individual tasks.

Nonetheless, even teams such as these show the disadvantage of "one-sided" self-selection, which is not based on explicitly agreed reciprocity: the active members decide as they see fit what they will deal with, and what priorities they will set themselves; users who do not become active themselves can only express their wishes in a non-binding way. In the case of free software, this is shown by the fact that it is often written *by* programmers *for* programmers. Free programs are excellent when it comes to any kind of tool for the programming and management of computers and networks, where they often leave their proprietary (non-free) alternatives far behind. There are also free variants of other kinds of software—office programs, graphics and video editing, games etc.—but these often lag behind their proprietary equivalents to a greater or lesser extent. Often the user-friendliness of free software also leaves something to be desired from the point of view of non-programmers.

To some extent these differences are due to the fact that proprietary software companies have huge development teams, and small teams of volunteers cannot compete with their work. But of course these huge teams do not come out of nowhere: they consist of programmers who would probably, for the most part, not be sufficiently motivated to work on the software for many years voluntarily and without pay; the salary paid to them (which is ultimately funded by the users) provides the necessary motivation. And in order to survive on the market, companies must take the needs and wishes of their (potential) users very seriously, and design their products on this basis. "The customer is always right" or "the customer is king" is a slogan, but it contains a substantial kernel of truth. The users are considerably less important for teams of unpaid volunteers. Of course it feels good if the software is used and appreciated by a large number of people, and some users will probably become active contributors sooner or later, thus ensuring that the project continues. But this again leads to a certain "self-similarity" between the active programmers and their "favorite users": anyone who cannot program or contribute in another way is less interesting.

Also relevant for material products and services (activities) are the distribution issues mentioned above. A software project can offer the current version of the developed software to *everyone* who wants to download it. In contrast, a bicycle factory cannot simply supply bicycles to everyone who wants one, because every additional bicycle costs time and resources.

4. Money and Explicitly Agreed Reciprocity Cannot Easily Be Rendered Superfluous

Overall, it can be said that there are many arguments against money, and especially against its "autonomization" in capitalism, and the way it dominates all other relationships as a compulsion or drive to maximize profit. At the same time, however, a look back in history shows that this autonomization of the profit principle is much more recent than the use of money, and that it is by no means an inevitable consequence of using money. Most notably, no systematic tendency towards profit maximization can be observed in places where there are markets but no market principle—where products are traded, but not land or labor.

Moreover, the analysis shows that explicitly agreed reciprocity along the lines of "I give so that you may give/do" is an option for human interaction which can hardly be replaced completely and without losses by other options, at least in "large-scale" contexts that exceed the Dunbar limit. Without the use of money or a similar unit of compensation, however, this kind of mutual agreement is seldom likely to be practicable. As long as there is explicitly agreed reciprocity, a form of money will probably be used to mediate it.

There is no doubt that thinking about forms of society in which explicitly agreed reciprocity (and therefore money) is no longer useful for anyone and therefore disappears can lead to exciting and inspiring thought experiments. As has been shown, however, the obstacles to this are very high. In the short and medium term, therefore, a more modest, but still highly ambitious and at the same time extremely important question is likely to be on the agenda: If there were a society where the forms of mediation did not take on an autonomous existence (e.g. in the form of profit maximization) and turn against humans, and in which no one, neither individual humans nor nature, fell by the wayside, how could such a society work? It would be entirely possible for money to still exist in such a society as a means to an end. But money as an end in itself, whose multiplication and maximization take precedence over everyone and everything, could not exist here.

References

Dalton, George (1971), *Economic Anthropology and Development*, New York: Basic Books.

Exner, Andreas (2010), "Das Zinssystem ist Schuld—ein Mythos der Krise," in BEIGEWUM and Attac Österreich (eds.), *Mythen der Krise*, Hamburg: VSA.

Available online: http://www.social-innovation.org/?p=3060 (accessed May 18, 2017).
Gabler Wirtschaftslexikon (2017), "Stichwort: Geld." Available online: http://wirtschaftslexikon.gabler.de/Definition/geld.html (accessed April 27, 2017).
Habermann, Friederike (2009), *Halbinseln gegen den Strom*, Königstein (Taunus): Ulrike Helmer.
Habermann, Friederike (2014), *Die gute Nachricht: Kapitalismus ohne Wachstum gibt es nicht*. Available online: https://www.degrowth.info/de/2014/06/die-gute-nachricht-kapitalismus-ohne-wachstum-gibt-es-nicht/ (accessed November 8, 2017).
Heimrath, Johannes (2012), *Die Post-Kollaps-Gesellschaft*, Munich: Scorpio.
Herzig, Thomas (2011), *Geldlose Gesellschaft—Alternative zum Kapitalismus mit Verfallsdatum?* Available online: http://www.streifzuege.org/2011/geldlose-gesellschaft-alternative-zum-kapitalismus-mit-verfallsdatum/ (accessed May 26, 2017).
Kratzwald, Brigitte (2014), *Das Ganze des Lebens*, Sulzbach (Taunus): Ulrike Helmer.
Ostrom, Elinor (1990), *Governing the Commons: The Evolution of Institutions for Collective Action*, Cambridge: Cambridge University Press.
Polanyi, Karl ([1944] 2001), *The Great Transformation: The Political and Economic Origins of Our Time*, foreword by Joseph E. Stiglitz, introduction by Fred Block, Boston: Beacon Press.
Shi Nai'an and Luo Guanzhong (1988), *Outlaws of the Marsh*, 4 vols, Beijing: Foreign Languages Press.
Siefkes, Christian (2008), *From Exchange to Contributions: Generalizing Peer Production into the Physical World*, Berlin: Edition C. Siefkes. Available online: http://peerconomy.org/text/peer-economy.pdf (accessed April 17, 2018).
Siefkes, Christian (2013), "Produzieren ohne Geld und Zwang," in Raul Zelik and Aaron Tauss (eds.), *Andere mögliche Welten?,* 169–179, Hamburg: VSA.
Wood, Ellen Meiksins (2002), *The Origin of Capitalism*, London: Verso.

4.2

Categorical Foundations of a Post-monetary Society

Stefan Meretz

Introduction and Statement of the Problem

In capitalism, money creates the societal bond. It ensures that needs and the means for their satisfaction come together, and it makes possible a highly staggered societal division of labor. Money is *an* essential factor of social coherence, and the incipient global financial crises show what happens when the creation of coherence no longer works. Post-monetary approaches have the task of formulating alternatives for precisely these societal functions: if possible, even alternatives that promise greater social stability and better life chances for all people. This task is much bigger than just finding a "substitute" for money as means of mediation—indeed, this view reproduces the predominant neoclassical economic theory's assumption of the "neutrality of money" or of the "monetary veil" that lies over all real transactions (Romer 2012; cf. also Lohoff in the present volume). In fact, what is at issue is an entirely new mode of reproduction,[1] in which money can no longer have any societal function.

Instead of dichotomously opposing "real" and "monetary" processes, like in the neoclassical economic paradigm, I start from the assumption of their identity: here in the sense of an identity that can comprehend the interrelationship of that which is different. Accordingly, what has to be explained is why a social process of reproduction—the process for creating and maintaining *all* conditions of life—gets split into "real" and "monetary" processes at all and why its moments then also gain independence vis-à-vis one another, even though they are only what they are in their unity and can also only be grasped in this way. It is only on this basis that we can first

[1] Reproduction is understood comprehensively in this text and means both the activities that are traditionally described as *production* and those that are just as traditionally "overlooked," because they are barely or not productive in the economic sense: household activities, caregiving activities, etc.—or, to use an old-fashioned expression, *reproduction in the narrow sense*.

develop the question of whether and how it is possible to depict a total social system of reproduction that does not give rise to the dichotomization of the real, because social mediation takes place in a qualitatively different fashion. To answer this question is the aim of this chapter.

Methodological and Conceptual Matters

Before approaching our question, certain methodological and conceptual preconditions need to be discussed.

Categorial Approach

I call the approach to theoretical development presented here "categorial." I thereby explicitly try to relate to the problematic of image affirmation or, respectively, its counterpart, image prohibition. *Image affirmation* means making experiences and (alternative) conceptions ("images") of the past and present into the basis of a blueprint for the future. Thus, for instance, "communism" is this sort of image, which has been shaped by way of historical experiences with formerly really-existing socialism. *Image prohibition* attempts to circumvent this problematic, inasmuch as it is assumed that such images of a future condition cannot go beyond what already exists and hence are to be avoided.

The categorial approach attempts to avoid this opposition by indeed repudiating images on the level of experiences and conceptions, but still trying to develop the basic outlines of a different form of social organization by elaborating the conceptual foundations of a post-monetary society on an intermediate theoretical level. Since these considerations are always made explicit, they are also always susceptible to criticism. At those points where anthropological assumptions creep in, they should also be made transparent. In this way, a scientific discourse is made possible that neither clings theoretically to the old forms nor drifts into the arbitrariness of mere wishing for something different.

Continuously consciously distinguishing between the supra-historical ontic content and the historically specific content of a statement is key for the categorial approach. On the one hand, the concrete appearance of social relations should not be ontologized: i.e. illegitimately declared human-natural being as such. On the other hand, the relations of the present also have a supra-historical ontic content, which is distinguished from the concrete forms of appearance and can be extracted from them. Thus, capitalism is undeniably a human society; but, with the monetary mediation that is proper to it, it does not necessarily represent an, as it were, "natural-ideal" form of social organization. On the described intermediate theoretical

level, we want in the present text to sketch out other—more precisely, post-monetary—forms of realization of human-social organization.

Mediation

The concept of mediation has hitherto been used without explanation. We want now to provide a more precise definition, since the concept is key for the argument to follow. Mediation is used here in a *dual* sense. On the one hand, it is a matter of the mediation of individuals in and with society. Society is the infrastructure, in which individuals develop, appropriate their possibilities and in which they take part, in order, ultimately, to contribute to its reproduction. On the other hand, it is a matter of the mediation of society with itself. From a systemic point of view, every society has a tendency toward self-preservation. It uses the reproductive contributions of its members to preserve and renew itself. It makes no difference who concretely makes these contributions; they have simply to be made by someone. In short: *Individual mediation* concerns the reproduction of individual existence; *self-mediation* concerns the reproduction of society as a system. Hence, it is a matter of two different perspectives on the same set of interrelationships.

The two moments of mediation interpenetrate and form a whole. Nonetheless, the differences have to be clearly seen. What appears from the point of view of society as *transpersonal necessities*, are for individuals merely *(inter-)personal action possibilities*.[2] If purposes and modes of functioning are inscribed into the societal infrastructures and hence have objective character, then these purposes on the level of necessities can come into conflict with subjective needs on the level of possibilities. This raises the question of how—on average—a society induces its members to fulfill the tasks that are socially necessary: hence, to do—more or less—voluntarily what has to be done, in order to reproduce the systemic context. This leads, in turn, to the question of in what way the individual action level (of possibilities) is mediated by the social level (of necessities): or, in other words, how the connection between *elementary* actions on the micro level and the *totality* of all actions on the macro level is produced.[3]

[2] The adjective "transpersonal" designates indirect relationships between people who do not know each other (others in general); "interpersonal" designates direct relationships between people who know each other (concrete others).

[3] Scientifically, it is of great significance not to try to explain the element-totality relationship in a one-sided fashion starting from one dimension: or, in other words, neither to want to derive the totality of the system from the sum of the elements nor, vice-versa, the functionality of the elements from the systemic totality. Otherwise, one would fall into a methodological individualism or, respectively, collectivism, which, it is true, appear easier to implement due to the seemingly clearer deductive relations ("from bottom to top" or vice-versa), but cannot capture the real dialectic.

Social Obligation

In addition to its function of mediation, money also has the possibility of delineating social obligations between actors (in the form of debt) and making them interoperable (payment redeems debt/s)—if necessary, with the support of threatened sanctions. Even if the dual mediation depicted above could take place in a post-capitalist and hence a post-monetary society (which has still to be shown), the question remains whether social obligations—hence, non-monetary relations of debt—will, then, become obsolete or if they possess a supra-historical character and hence will look for other forms of expression. In order to provide an answer, we need to define the concept of social obligation more precisely.

Social obligations are subjective or objective expectations of or claims on individuals, collectives or society as a whole. They arise from forms of reciprocity, in which contributions ("giving") and utilizations ("taking") are conditionally linked to one another by way of expectations or claims. They do not arise when contributions and utilizations occur unconditionally.[4] The question for a post-monetary society is hence whether and for what domains (inter-individual, collective, societal) such unconditional reciprocity relations can be adopted.

Capitalism

The conceptual reflections that we have undertaken thus far have largely been general in nature; they have thus abstracted from the fact that we are today dealing with capitalist relations. This fact has now to be taken into account.

Elementary Form: Commodity

The dual mediation depicted above is also reflected in individual reproductive actions. These have to be doubly functional: hence, at the same time, to secure one's own existence and to reproduce the systemic context in which the actions possess their functionality. The basic social mode of action in capitalism is (participation in) the production of commodities for sale and their transformation in money (as a profit or wage) for the purpose of purchasing commodities required for preserving one's existence. The

[4] This means that the concept of reciprocity, which grasps personal relationality between actors, is already too narrowly defined, if one only applies it to "linked" conditional actions, such as are to be found in the case of gifts (giving and expected giving in return) and that of exchange (from direct barter to the mediating market).

commodity is thus the *elementary form* (cf. Marx 1976: 125) that generates the *totality* of the system of capitalism and, at the same time, is generated by the latter and only within it possesses the function of elementary form (cf. footnote 3). On this understanding, the commodity is not a neutral thing, but rather a *social form*, in which special "things" and "services"—products for sale—are produced. Their social form, the manner and purpose of their production, is inscribed in commodities.[5]

In all societies, production is—to a varying extent—production for general others. The particularity of capitalism is the production for others on the basis of private property. Private production by entities that are separate from one another requires after-the-fact ("*ex post*") that there be exchange for the purpose of mediating between producers of goods and those who need them (and have the money to buy them). The market is the generalized instance of this *ex post* mediation.[6] The universality of market mediation leads, in turn, to a number of far-reaching consequences. Some of the aspects that are relevant to the context of the current presentation will be discussed here: duplication, equivalence, competition, inversion, valorization, externalization, and logic of exclusion.

Duplication

The commodity "duplicates" itself, because its two moments of usefulness and mediation develop in opposition to one another.[7] The commodity is physically useful for those who want to obtain it, in order to satisfy needs: in other words, for the buyer, but not for the seller. The latter is instead interested in successful exchange: sale. In developed capitalism, the commodity indirectly establishes a relation with all other commodities in exchange: or, more precisely, with the outlay required for their production.[8]

A societal relation with all productive outlay is thereby formed. This relation is *value*. The value of a commodity reflects the relation of the outlay required for its production with respect to all other commodities, but it

[5] This applies both to their concrete objectivity—for instance, their handleability, repairability, modularity, durability, etc. (cf., for instance, Dannoritzer and Reuß 2013)—and negative externalities of production.

[6] One departure from the rule of *ex post* mediation is, for instance, made-to-order production or, in other words, certain B2B connections, whereby the services are defined in advance. This, however, does not change anything in the overall character.

[7] Although usefulness and mediation are supra-historical dimensions, the fact that they develop in opposition to one another is specific to capitalism.

[8] Whatever might flow into the total outlay—labor time, the training of skilled labor, the means of production employed, etc.—is not pertinent for our reflections. Neither is the fact that the latter—since it is societally determined—cannot be specified.

cannot itself be specified as an absolute quantity. In order to be quantitatively operational, value must be depicted in a fixed objective or symbolic entity. This entity exists in the form of *money*. Money exchanges against all commodities and hence is in a position to represent value relations in the universe of commodities by reference to itself. Money is the general commodity, and therefore general equivalent, and discharges the function of expressing value quantities. Thanks to the value expressed by means of its relation to money, the dual-commodity can enter into societal mediation. Colloquially expressed: The commodity has a price that has to be paid to obtain it—and, ultimately, to use it. Although the satisfaction of needs provides the original impetus for production, value has priority.

Equivalence

The generality of value comparisons, cutting across all differences in individual acts of exchange, provides for equivalence. On average, consequently, equal values always exchange: hence equal societal production outlays. It is important here that usefulness is irrelevant for mediation. Only the property of representing value—as expressed in money—is taken into account for the mediation. Considered in isolation, however, the value property is entirely immaterial and is not suitable to satisfying needs. In the opposition between usefulness and mediation, mediation plays the determining role. This means that commodities have first to pass through the mediation, i.e. they must be sold and bought, before they can satisfy a need. Whoever, for instance, due to lack of money, is unable to participate in the process of mediation, is excluded from the social organization's objective mode of provision. Or expressed in everyday language: "Money talks, bullshit walks."

Competition

The moment of the mediation of commodities does not only force commodities into a universal relation of comparison and mediation, but also their producers, who produce privately and separately from one another. Despite its private character, production is always also simultaneously societal, since it has to be directed toward achieving the societally requisite outlay for the production of commodities or producing for less. Since all producers (must) do this, but the market is limited, the social relationship into which private producers are forced is that of competition.[9]

[9] One consequence of duplication, equivalence and competition is the compulsion to grow. This is not, however, of further interest to us here.

Inversion

Active producers can always freely decide about their production, but the standard by which their action has to be oriented is given: It is sellability or, in other words, the compulsion to produce commodities at their societally current value or preferably below it. An unintended, but unavoidable inversion of the objective and the social arises: Social relations appear as properties of relations among things. Producers organize their social relationships in accordance with the objectively necessary properties that commodities must have, in order to be sellable. The commodities tell the producers what is to be done. Marx called this the "fetishism which attaches itself to the products of labor as soon as they are produced as commodities, and is therefore inseparable from the production of commodities" (Marx 1976: 165). This fetishism is not mere appearance, but rather real objective compulsion, to which producers in competition must yield, in order to remain in business.

This objective compulsion takes many different shapes and pervades all social domains: whether it be as compulsion to grow, compulsion to save, externalization compulsion, etc. An ineluctable logic of things[10] determines what can be socially organized and how—and what cannot be.[11] Put pointedly: Instead of a conscious social movement of things for sensory-concrete purposes (needs), what arises is an unconscious objectively driven movement of the social for alien abstract aims (increasing money). In this process, money as objective-quantitative value relation is the means of (individual or collective) assignment of social obligations ("debts"). Money decides, and it has no morals.[12]

[10] I use the term *logic* in the sense of an objective *rationality* that is inherent to structures and constitutes them. Besides objective-structural rationality, there is also subjective rationality (or reasonableness). Objective rationalities—logics—suggest a subjective course of action to me; I do not have to follow it in each case, however, but rather can always develop my own subjective rationality or, in other words, reasons to act otherwise.

[11] According to Hans-Werner Sinn, the president of the ifo Institute for Economic Research, "the economic laws determine the framework within which politics can move" (Sinn 2017: 23).

[12] Since money is obviously not a subject—even if the business press daily celebrates the inversion in the form of "active markets" and the like—the objective compulsion under which actors operate is now being largely re-subjectivized: Actors are assumed to act with a motive or even intent (for instance, in the form of "greed," etc.). The element of truth in this attribution is the relationship of possibility in which all individuals stand to one another. But it overlooks that agents must decide *voluntarily*, in a system-functional sense, for the *right possibility*, if they want to secure their position and existence in this context. It always remains possible for an individual to opt out. But this does not affect the system as whole, since the required system functions only have to be fulfilled on the average by someone, not, however, individually and concretely by a specific person.

Valorization

Competition and inversion, as well as the primacy of mediation, lead to a compulsion to valorize in production. This means that production is undertaken primarily to increase the capital employed. Money must beget more money. Inasmuch as it is valorized, money thus relates to itself. The production of useful goods is merely a means for fulfilling the primary objective of valorizing money. On the level of money or, respectively, of capital, we also find that capital appears as an active power and its possessors only as agents executing a given purpose that is alien to them. The positions of object and subject get inverted: Capital becomes, as Karl Marx put it, an "automatic subject." For Marx, value is "the subject of a process in which, while constantly assuming the form in turn of money and commodities, it changes its own magnitude, throws off surplus-value from itself considered as original value, and thus valorizes itself" (Marx 1976: 255; translation modified).

Externalization

The constant pressure to lower the price of commodities leads tendentially to the externalization of outlays (= costs) that do not contribute to the sellability of commodities. Externalized aspects can then be re-internalized again, if they raise sellability in a given segment (for instance, organic and fair-trade products) and satisfy additional needs ("good conscience," etc.). A further possibility of forced re-internalization is represented by government legislation on compliance with certain standards. Such legislation is, however, subject to competition (among locations) to offer the best conditions for the valorization of capital. This can trigger a dynamic of lowering standards (a "race to the bottom"): for example, with respect to taxes or environmental standards. Externalization is the structural norm, along with all of its consequences for people, the environment and resources. Despite all efforts to create a price for it within the commodity logic (CO_2 emissions trading, etc.), it has not been possible up to now to reverse the trend or even just nearly compensate for it.

Logic of Exclusion

Externalization on the level of things corresponds to the logic of exclusion with respect to social relations. By virtue of duplication, competition, and the compulsion to (self-)valorization, people are placed in a structural relation of exclusion.

Analogously to competition and cooperation, the logic of exclusion is not opposed to reciprocity, but is rather a form of realization of the latter. The

logic of exclusion is manifest as an action rationality,[13] according to which it is subjectively functional to prevail at the cost of others. This rationality can be grasped as *structural conditional negative reciprocity*. The opposition between the dimensions of use and mediation of the commodity is manifest as opposed interests in social interaction. The seller wants to obtain a high price, the buyer a low one; the buyer strives to have a high degree of satisfaction thanks to high quality, which the seller, for competitive reasons, will tend to minimize.[14] Sellers—whether of products or their own labor-power—are in competition with one another. The market share conquered by one seller is the market share lost by another; the increased profit of one seller, is the loss of another. Since the logic of exclusion is not a voluntary relationship, but rather a structural relationship, it cannot simply be eliminated because one wants to eliminate it—just as little as it is always the personal intention of one seller to cut out the other. It is however, the case that under such conditions, those persons are especially successful, who have learned deliberately to use social or supposedly natural differences between people (gender, skin color, education, sexuality, age, etc.) to denigrate, marginalize or even physically damage or destroy.[15]

The Double Double

In the course of the argumentation up to now, we have developed first the supra-historical double relationship between social mediation of the individual and systemic self-mediation of society, which is valid for all societies, and then the historically specific opposition between usefulness and mediation of the commodity, which is only valid for capitalism. But how do the two double relationships relate to each other? How does the social mediation of the individual and the systemic self-mediation of society manifest under capitalist conditions? These questions are to be discussed here from the perspective of the dimensions of usefulness and mediation.

Usefulness

Due to the priority of mediation over usefulness, commodities have first to be sold before they can be consumed. Hence, money-earning by way of one's

[13] Action rationality and action logic grasp the same set of interrelationships, with respect to which the former concept highlights more the subjective dimension of reasons and the latter, the structural-objective dimension. Cf. also footnote 10.

[14] The response that businesses have, then, precisely to prevail on the market by way of better quality merely shifts the same argument to a higher level of quality.

[15] Hostility vis-à-vis others also contains moments of hostility vis-à-vis oneself (cf. Holzkamp 1983: 376ff.). These, however, can only be mentioned here, not discussed.

own economic activities of (self-)valorization comes before purchase. But despite the dominance of monetary mediation in commodity society, far from all socially necessary activities are organized in this way. On the contrary, considerably more than half are done without pay (Statistisches Bundesamt 2015). Nonetheless, the relative share of unpaid activities—such as caring for children and the sick or disabled, relaxation, education, and volunteering—has fallen in the last decade (Schäfer 2004). In other words, more and more socially necessary useful activities are mediated by money; they, however, still presuppose a larger foundation of unpaid activities. The gender difference remains clearly visible in this connection: Women have a considerably larger share of the unpaid work than men. (On the problematic of social reproduction, cf. also Winkler 2013.)

Mediation

As the concept already suggests, systemic self-mediation is connected to the moment of mediation of commodities: their value shape. This means that self-mediation, as supra-historical property of all societies, is realized in capitalism in the form of value-mediation or, reified, of monetary mediation. As consequence, however, the need/value and social/objective inversions that were analyzed above get imported into and become a component of societal self-mediation. Society confronts the individual as an alien set of interrelationships, in which value and compulsion dictate the direction. This experience is, however, often ontologized and transformed into the essence of human society per se. In fact, it is a historically specific, and hence also temporary, form of realization of social self-mediation. This means that a form of social self-mediation is possible in which relations are consciously organized around needs, such that society can be experienced not as something alien, but as something proper to individuals: as a set of interrelationships that correspond to individuals and their needs.

The initially separate analysis of sociality and commodity production makes it possible to recognize that every society has a self-reproductive character, but that this function merges with the "automatic subject" of endless valorization of value only in capitalism. Two erroneous conclusions can thus be avoided: (1) that capitalism is the "natural" developed form of social self-mediation; (2) that a post-monetary society cannot involve any self-reproductive systemic self-mediation. Instead, it becomes clear that the systemic self-mediation of society can only be given a basis in needs if the inversions described above (need-value, social-objective) are eliminated in a post-monetary society. This point has now to be developed.

Intermediate Methodological Consideration: Distinguishing between Discourses

We can now develop the categorial preconditions for discussing the question whether there can be a post-monetary society and what forms of social mediation can take shape that are not based on individual obligations ("debt"). Before doing so, however, a distinction has to be made among discourses, in order not to mix arguments illegitimately.

Discourse 1, which I call "utopia discourse," concerns the question of whether and how, in principle, a post-monetary society can develop on its own basis. This contains the assumption that a post-monetary society is a society that is qualitatively distinct from the society that exists today. It is based on its own categories, which need to be elaborated, and it can only meaningfully be discussed *within* this discursive space.

Discourse 2, which I call "transformation discourse," concerns the transition from contemporary society, with the categorial foundations proper to it, to a post-monetary society and its own categorial foundations, which have first to be developed in the utopia discourse. The transformation cannot be meaningfully discussed without it being clear where it leads (cf. also Sutterlütti and Meretz 2018).[16]

The utopia discourse thus has priority and will be the focus in what follows. I thereby discuss starting points ("embryonic forms") of a possible development in the here and now, as well as the necessary contradictoriness that the new must form under the given conditions (cf. Meretz 2014a), only to the extent that they help to support the utopia discourse.[17] In order to be able to analyze embryonic forms of something new and contradictions in the real development at all, we need first to pursue the elaboration of the categories of a new form of social double mediation. What is at issue here are questions like: Can a society that is not based on separate private production and competition (commodity production) "function" in a stable manner? What could new non-monetary forms of mediation look like? What could this mean for social relations of mediation and obligation?

[16] Numerous criticisms of the commons approach show what happens when the two discourses are *not* distinguished (for instance, Mats 2017).

[17] Research process and presentation need to be distinguished here. Per the considerations on the element-totality interrelationship, element and totality are, in fact, each preconditions for knowing the other. There is, however, no deductive way to fulfill this requirement. The two moments can only be developed together in a reflexive research process. This is, however, difficult to make clear in a linear presentation.

Post-Monetary Societies

Now that the conceptual preconditions have been developed in the analysis of sociality in general and of capitalism in particular, we can use them for the development of the categorial foundations of a post-monetary society. In doing so, we need always carefully to ask to what extent the supra-historical aspects of social organization can come to bear in such a way that the inversions of capitalist socialization do not occur. Hence, the baby is not to be thrown out with the bathwater. Rather, the bathwater has to be changed.

Elementary Form: Commons

What element-totality interrelationship creates the preconditions for the development of a post-monetary society? Or, to put it differently: As basic matrix of action, what element produces the totality of the new post-monetary societal system and is, at the same time, produced by it? The social micro-form that we are seeking cannot be created *ex nihilo*, but rather must already exist in undeveloped form—in embryonic form—as part of human-societal potentiality. The *commons* can be identified as this micro-form. According to the German Wikipedia entry, the concept refers to "resources (code, knowledge, food, energy sources, water, land, time, etc.) that come from self-organized processes of common needs-oriented production, administration, care, and/or use" (de.wikipedia.org/wiki/Commons; accessed November 14, 2017).

When speaking of commons in what follows, we will always be doing so in the sense of *emerging commons* or new commons that took shape in the late phase of capitalism—as opposed to "residual" traditional commons (cf. Hess 2000),[18] which in the early phase were largely (but not entirely) marginalized and destroyed by *emerging capitalism*.[19]

As undeveloped form, however, (new) commons do not possess any systemic framework for development, in which their own quality could come to the fore. In capitalism, they find themselves in a, so to say, "hostile environment." This means that embryonic forms that are present today can never have the quality of a constitutive elementary form in a corresponding total system (cf. Meretz 2014b). In the conceptual development, the unfolding

[18] In the Anglo-Saxon legal tradition, the commons certainly took on institutional forms: for instance, in 1215, in the *Magna Charta*, and in 1225, in the *Great Charter of the Forrest* (cf. Linebaugh 2008).

[19] This process of marginalization and destruction is also known as the "enclosure of the commons" (Neeson 1996), and it is by no means finished, but rather accompanies the ongoing global process of valorization of domains that have hitherto not been subsumed under the value form.

of present potentials can thus draw on existing, empirically available types of relations, but it must push the latter beyond the existing restrictions by capturing their *own internal logic*. This has been done in numerous studies (Acksel et al. 2015; Baier et al. 2016; Exner und Kratzwald 2012; Habermann 2009, 2016; Helfrich and Heinrich-Böll-Stiftung 2012; Helfrich et al. 2015; Meretz 2009, 2010, 2014a, 2014b, 2014c, 2015, 2017; Schlemm 2006; Siefkes 2008, 2013, 2014, 2016; Sutterlütti and Meretz 2018; van Abel et al. 2011). In what follows, I will summarize the results in relation to the categorial problem that has been raised here and contrast them to the forms of appearance known from commodity production.

Ex Post and Ex Ante Mediation

A first key difference is to be found in the relation between usefulness and mediation. In the case of the commodity, the two dimensions follow separate action rationalities. Production is certainly about usefulness and potential need satisfaction, upon which, however, the primacy of value is superimposed. For whether the potential for need satisfaction is also realized is only to be found out *after* production (*ex post*), if mediation, i.e. sale, actually succeeds and the commodity is consumed. This leads to the production of a gigantic collection of commodities, existing side-by-side, whose potential for satisfying needs has not been mediated among each other, since the mediation takes place not via the dimension of usefulness, but rather via the social comparison of outlay, viz. value. This has as consequence, in turn, that producers are (and must be) decisively oriented toward minimizing outlay or, in other words, cost reduction. In competition, the pressure is great to externalize all aspects of need that do not promote sellability, in order to lower costs.

From the point of view of the consumer, different needs come into competition with each other: What cheapens one commodity, and thus makes the need satisfaction it provides more easily accessible, leads, on the other hand, to an impairment of needs (for instance, in production by virtue of poor working conditions or low wages). The logic of exclusion on the level of social relations, which was described above, finds its counterpart on the level of the objective satisfaction of needs. Here too, the one need can exclude the other and the one satisfaction of need can harm the possibility of satisfying a need in a different domain. As a rule, these relations of harm are distributed between different persons, such that the others at whose costs one lives remain, for the most part, invisible. But, due to the complexly cascading form of mediation, even when it is a matter of the same person, the connection is, for the most part, opaque. Hence, the real connection between "wanting to purchase a commodity cheaply" and "not wanting to accept the externalizations

that make the cheapening of the commodity possible"—or, in other words, the de facto self-damaging character of one's own conduct—fails to be recognized. This yet again makes clear that grasping commodity production as mere production of goods is conceptually inadequate, because the aspect of social form is thereby left out, with the consequences that have been shown here.

The relation between usefulness and mediation takes a completely different form in the case of the commons. It does not here split up into different action rationalities, but rather the mediation takes place *via* the dimension of usefulness. The needs that are connected to the usefulness are thereby directly and tendentially placed in a relationship *before* reproduction (*ex ante*). Already at this point, conflicts between needs can thus come to light and be mediated.[20] Commons thus tend to internalize other needs: i.e. to find solutions that can satisfy the primary need without this occurring at the cost of secondary needs. To the *logic of inclusion* on the side of needs and their realization, there corresponds the same logic on the side of the social relations among actors. Detailed descriptions of possible forms of mediation based on this will be provided below.

To use a pointed formulation, *ex post* mediation has a *remedial* character, which can never entirely catch up or compensate (for instance, by way of public measures); whereas *ex ante* mediation is characterized by its structurally *precautionary* character.

Reproductive Dimensions in Commons

The precautionary production and maintenance of societal conditions of life—reproduction in the general sense described above—can be characterized by means of three reproductive dimensions.[21] In the first place, *resources* enter into the process: whereby the concept of resources is comprehensively understood here as preconditions for reproduction and, in addition to natural resources, also includes (intermediate) products, knowledge and skills, as well as means of reproduction. The process of reproduction then takes place

[20] It is not possible, but also not necessary, constantly to mediate a need that has to be realized with all other needs that could be affected by its realization. In societies with a highly developed division of activities, the aim is to minimize the outlay on mediation (in the case of the commodity: transaction costs): i.e. not to achieve a complete mediation of everything with everything else, but also not to establish an insufficiently complex hierarchical mediation. Instead, such societies tend toward *network-like* structures of mediation, the properties of which will be discussed further on in the text.

[21] Sutterlütti und Meretz (2018) use three process dimensions (production, mediation, and utilization), which, in addition, thematize interpersonal relationships and also take into account transpersonal mediation. In this text, the latter are discussed as features of commoning or, in the case of mediation, in its own section.

in a—historically highly varying—*social form* and also produces the latter. Finally, at the end of a cycle of reproduction, we find *products* in the broadest sense, which serve to satisfy needs. These include both material and symbolic goods (for more on the classification of goods, cf. Meretz 2009), as well as interpersonal services and ("care") relationships. Per critical psychology, all needs have two basic and interrelated dimensions: the *sensual-vital* dimension and the *productive* dimension (H.-Osterkamp 1976). The sensual-vital dimension of need is directed toward individual contents of need (like eating, sexuality, security, etc.), which—as mediated by way of the productive dimension of need—can be achieved by participation in the disposition over the precautionary production of means of satisfaction. "Disposition has . . . a natural foundation in needs" (Küpper 2016: 50).

Resources in the broad sense presented here enter into both commodity production and commons reproduction. But the purpose and hence the role of the resources differ considerably. The purpose of commodity production is the production of sellable—which always means: competitively priced—commodities. Resources serve to achieve the required (or even simulated) sales quality at the lowest possible price. They enter into production as a cost factor that is to be minimized. The purpose of commons reproduction is achieving usefulness, in order to satisfy needs. If in commodity production, the relation to resources is essentially *instrumental, extractive and remedial*, in commons reproduction, it is essentially *goal-oriented, preserving and precautionary* (see above).

The social practice of the commons is also described as *commoning*.[22] It is the process of production and/or maintenance of useful goods intended for the satisfaction of needs, as well as of social relationships in the process. We can briefly mention the following features of commoning (features of commodity production are given in parentheses to bring out the contrast):

- *Freedom from domination and voluntariness* (objective compulsion and personal command): Since, as a rule, there are structurally no instruments of power in commons, no one can be made to do something that he or she does not want to do, but rather participation occurs, in principle, on a voluntary basis.
- *Contributions* (exchange): Interpersonal reciprocity is, in principle, unconditional (see above), so that no social obligation exists on the micro level. The motivation for such uncoupled contributions comes from the productive urge to want to take part in disposition over the

[22] The phrase "There is no commons without commoning" has been attributed to the historian Peter Linebaugh (cf. Habermann 2016: 25).

collective (and hence societal) process, which is the precondition for securing individual existence.
- *Individual self-development* (marketable self-valorization): A further aspect of the productive need dimension is the structurally positive reciprocal development of each person's own individuality. This means that one's own development of individual possibilities is positively related to the development of others and presupposes it—and vice-versa.
- *Collective self-organization* (heteronomy): The differences in resources and products, as well as in the persons involved, is reflected in social organization. The participants come to agreement on the rules, which correspond both to their needs and to the conditions.
- *Possession* (property): What is decisive is really disposing of the resources that are necessary for reproduction. (On the difference between possession and property, cf. Meretz 2010.) Commons do not require any property, but on the basis of real possession, they can also exist under conditions of legal property.

The results of commoning while using resources are material, symbolic and social *products* in the broadest possible sense.[23] It here becomes clear that commons know no separation between production and reproduction. Instead, all—in the traditional sense—productive and reproductive conditions of social life are fulfilled. This means that commons do not generate the division into spheres that is well known from commodity production: namely, that into a male-structured public/value-productive sphere and a female-structured private/reproductive sphere (cf. Scholz 2000), each with its own action logics. New creation and maintenance/care can be (analytically) distinguished; but they belong together in practice and they obey the same inclusive action logics.

Commons Society

Now that, implicitly anticipating the whole, the *element* of the *commons* in the element-totality interrelationship has been determined—the element only has its function amidst the whole—I want now to bring in the still outstanding determination of the social *totality* of a *commons society*. To this end, reflections are required, in turn, about how this whole can be conceived precisely on the level of the whole.

As conceptual means, I employ a *network*, which consists of *nodes* and links between the nodes or *edges*.

[23] Interpersonal relationships, social rules, etc. are also "products" of commoning.

A node is an individual commons. This is, in turn, itself a network of directly cooperating, interacting people. It represents the level of (inter-) subjective possibilities (see above). The commons society is, then, the transpersonal aggregate network of all socially cooperating mediated commons nodes and represents the level of objective necessities. Interpersonal and transpersonal relationships are depicted as *edges* and are based on the same qualitative-concrete mode of mediation (on which, more later). A society is, therefore, a layered transpersonal network of personal networks. The topology of such a social network of mediation is characteristic for a specific social form, and hence this is also the case for the commons society. Topologically, the network of a commons society can be described as *polycentric* and *scale-free*, and the concept of *stigmergy* (to be explained below) is suitable for grasping the substantive quality of the mediation.

In commons research, *polycentricity* is used, above all, to describe "self-organized . . . complex adaptive systems" (Ostrom and Ostrom 2009: 156), such as I have grasped them here as networks. When network systems grow, they do so not only through the emergence of new nodes and edges, but also by virtue of the fact that the network is permanently renovating itself structurally. A system is described as polycentric when it comprises several dispersed centers that take on governance functions. Certain nodes are increasingly assigned meta-tasks or, in other words, tasks involved in creating the preconditions for the functioning of the other nodes: for instance, developing infrastructure. Such poly-centers or meta-nodes (here: meta-commons) are also called *hubs*, and they draw numerous linkages to themselves. With increasingly non-hierarchical distribution of coordinating tasks across several nodes, I speak of *distributed self-planning* in the network.[24]

Along with the continuing inner polycentric differentiation of a large complex network, a *scale-free* distribution of the network density (or, in other words, of the incoming and outgoing edges) of the nodes is formed. This means that the topology is largely self-similar and hence the properties of the network are largely scale-independent: Sections of the network behave like the network as a whole. The ideality of the theory—networks that obey a power law are scale-invariant—has, however, a lower limit in reality: Partial networks that are too small no longer function like the network as a whole. Nonetheless, *partial* scale-independence is an essential property of social organization, since it secures a high degree of robustness vis-à-vis node

[24] The fundamental difference between embedded distributed self-planning and separate central planning in the style of really-existing socialism should be mentioned here, but cannot be further discussed.

failures or, in other words, partial damage to the networking (such as occurs, say, during disasters).[25]

Consideration of the topology does not yet tell us anything about the substantive quality of the edges: i.e. about the relations of mediation between persons and commons. This is the subject of the following section.

Stigmergy

The concept of *stigmergy* is derived from the Greek words *stigma* (στιγμα) for marking and *ergon* (εργον) for labor. It was coined by the French biologist Pierre-Paul Grassé (1959), who studied the emerging behavior of termites. In general terms, localized signs indicate subsequent follow-up activities or desired new activities. Francis Heylighen (2007) applied the concept of stigmergy to commons-based peer production (cf. Benkler 2006 and Siefkes 2008). Stigmergy is not a novel form of mediation that is limited to a possible commons society, but rather an aspect of every society. The market can, thus, be grasped as a stigmergic system. Here, we will unpack how stigmergy can come to bear as a *new principle of post-monetary mediation*. In what follows, we present these considerations and discuss them with respect to the following aspects: decisions, conflicts, information, bandwidth, coordination, and planning.

Decisions

Collective provision for society as a whole requires that decisions be made about what will be done and how. Nowadays, *hierarchical procedures* are usually employed, in which decision-making power increases the higher one goes in the hierarchy. To this end, field information has to be aggregated upwards, condensed into a decision, and allocated downwards again in the form of process instructions. This is meant to ensure that processes involving a division of activity lead to a consistent result.

Marx criticized the separation of decision and execution as the "enslaving subordination of individuals under the division of labor" (Marx 1938: 10). By virtue of this separation, as well as the lack of transparency and limitation of individual opportunity for development that come about when there are many hierarchical levels and a high degree of subdivision into particular steps, a considerable loss of motivation can occur, and external rewards (e.g. monetary gratification) are not able to compensate for it (cf. Deci et al. 1999). The flattening of hierarchies and the creation of areas of individual initiative

[25] It would be interesting to investigate whether the current monetary system possesses scale-independence and hence can (still) tolerate local node failure.

reduces the discrepancy, but cannot offer a fundamental solution to the problem of motivation.[26] This is all the more the case, inasmuch as under conditions of commodity production, the incentives for production are not need-based, but rather value-based.

Different variants of majority decision and *consensus* are often mentioned and applied as alternatives to hierarchical decision-making processes. It is claimed that, above all, consensual procedures involve all parties and thus lead to greater motivation than, say, majority decisions. But even consensual procedures have their limits. A consensus is not based on the full agreement of all parties, but rather on a collective process of coming to a decision with which all parties can live and to which, in the end, they can all submit in the interest of common action. The decision and the information that is relevant to it are transparent for the parties; nonetheless—or precisely for this reason—it is often the case that a decision needs to be discussed at great length. The mere fact that a consensus is brought about does not automatically create motivation for all parties. For it can happen that some subordinate their individual views and needs, in the interest of reaching a decision, and this can adversely affect their motivation. If outside factors impact the decision-making process—say, the necessity of taking external economic constraints into account—the difference between one's own wishes and the externally influenced compulsion can have further negative effects.

Self-selection inverts the direction of the decision: Instead of needing to bring a—whether hierarchically or consensually made—decision to people (with whatever degree of (internalized) pressure), people themselves seek out the decision that is right for them. On the basis of locally available information, which may indeed have global character, they choose the constellation in which they want to be or to become active. Voluntary self-selection provides the best basis for truly motivated action. In a commons society, moreover, it is not counteracted by external pressures (to valorize or the like).[27] There thus arises a kind of "do-ocracy" (Habermann 2009: 140f.), in which actors take responsibility for the process and own it.

[26] The problem of motivation is far more complex than has been indicated here, since a distinction has to be made between the action level (what is done and why) and the operational level (how it is done). Both levels have their own respective relations to motivation and give rise to their own motivation problems (Holzkamp 1983: 279ff. and 298ff.).

[27] Forms of compulsion that—say, due to disasters—can create situations in which we feel "compelled" to help persons who have been injured, to undertake rescue operations, etc., need to be distinguished from forms of compulsion arising from non-sensory, need-independent alien logics. As shown in practice, the need to help is also a need.

Conflicts

The responsibilities of the process owner also include dealing with limitations and conflicts. Under the conditions of an inclusionary logic or, in other words, unconditional positive reciprocity, conflicts cannot be resolved by way of interest organization and exercise of power. On the one hand, the infrastructural preconditions for amassing power (the state, property, repressive instances, etc.) are lacking. On the other hand, the organization of interests for the purpose of realizing needs at the expense of others is off-putting and reduces the willingness to cooperate. Just as under the conditions of an exclusionary logic, where good reasons exist to prevail, by way of the effective organization of interests, at the expense of others, under the conditions of an inclusionary logic, there are good reasons for everyone continually to win over others as partners for realizing their own respective needs. What is more: It becomes increasingly evident, both emotionally and cognitively, that the needs of others are fundamentally included in my needs—not in every individual case, but on average. This means that by satisfying the needs of others, I can also satisfy my own needs. In a certain way, this also gives rise to competition: not, however, in the old exclusive sense, but rather in the sense of an inclusive winning over of others for the purpose of cooperation. Conflicts that, nonetheless, arise in the process (due, say, to limited possibilities for realization) can likewise only be resolved in a cooperative fashion: by prioritizing implementation, by the search for alternative solutions and, finally, also by individually (or also collectively) seeking out cooperative contexts that are better suited to satisfying one's needs (per the principle of self-selection). Competition is thus a competition for inclusiveness. Whether sanctions still have a constitutive role for conflict resolution under these circumstances is debatable (cf. the discussion by Siefkes, Meretz and Habermann in the present volume).[28]

Information

The information that mediates processes and decisions can have two sources: Direct process information—also called "sematectonic"[29] information—emerges in and along with the activity; indirect or marker-based information is information that accompanies the activity and serves for planning and coordination. Direct process information includes. among other things,

[28] When the Nobel Prize winner Elinor Ostrom (2009) emphasizes the need for "boundaries" and "sanctions" in the conditions for successful commons that she has formulated, this is due to the need for protection under conditions of an exclusionary logic, but is by no means a fundamental "property" of commons.

[29] From the Greek σήμα (sema) "signs" and τέκτων (tektōn) "artisan, carpenter": signs/markers that artisans leave behind.

measurements, status signals,[30] tracking data (cf. Kathöfer and Schröter in the present volume), and affective signals between people. Indirect process-steering information includes requirement descriptions, to-do lists, discussions, plans, statistics, wish lists, etc. Such qualitative information emerges in advance of or from processes that create the immaterial and material conditions for the satisfaction of needs. In comparison to merely indirect, monetary-quantitative formats, they depict these needs *qualitatively* and *directly*. Above all, interpersonal information must not be technically mediated, however, but rather can be directly exchanged: especially, for instance, in the case of personal care activities. On the other hand, the medial mediation of information comes to bear, above all, in the case of transpersonal coordination.

Bandwidth

The information formats must be able to depict the substantive quality of the information in a way that is adequate to the process. Control data, texts, images, videos, augmented reality, etc. require considerable bandwidth, which is, in principle, made available by the internet or can be. I do not see here any fundamental obstacle to achieving global integration with large bandwidth.

Coordination

Its indirect and emergent coordinating effect represents an essential property of stigmergic coordination. Both local and global information that is available *in situ* facilitates local decision-making and action. In a commons society, this information is qualitative in character and capable of depicting people's needs. Local action is thus inclusive and need-oriented, since it develops to a large degree on the basis of the needs of others.

Exclusive behavior remains entirely possible; but it is dysfunctional and hence does not become decisive. Indirect coordination leads to disequilibria being continuously propagated throughout the network until a dynamic coherence is also established on the level of the societal system. This means that a state of ideal equilibrium is never reached, but that disequilibria provide signals for local action.[31] The idea of an essentially static equilibrium (such as also predominates in the tradition of neoclassical theory formation) is erroneous, since all parameters (needs, procedures, resources, etc.) are

[30] For instance, the "red links" in Wikipedia, which are often mentioned as an example and which show that there is still no article for a linked concept, but it would be desirable to have one.

[31] "Local" is not to be confused with "decentralized": "Local" means *in situ*, which can also apply to central processes. Thus, it is certainly possible for a central infrastructure to be locally managed.

continuously changing, such that the guiding concept is rather *systemic self-adaptation* on the basis of *collective intelligence*. What drives the emerging coherence is not, however, an abstraction—like value in the case of the market—which indirectly mediates needs, but rather needs themselves.

Planning

Stigmergic emergence means that—like the "invisible hand" (Adam Smith) in the case of market mediation—social coherence is produced "behind the backs" (Karl Marx) of actors, but that this does not occur blindly, but rather with complete transparency.

By way of conscious action, the social process of *distributed self-planning* can be re-directed, without, however, being subject to the illusion that a complete organization of social relations is possible. Every attempt to plan the societal totality—or even to do so from a privileged (central) position—ends up in totalitarian forms of rule. But how can social transparency be produced, in order to bring adaptive moments into distributed self-planning? Traditionally, this is the task of politics. But, here too, I assume that the political functions of systemic orientation and adaptation do not belong to a separate sphere, but are rather embedded in the societal process of mediation. Since there is no mediating abstraction outside of the mediation of needs, an independent instance of redistribution, decision-making and priority-setting has no proper function. Adaptation, decision-making and prioritization are rather tasks that are distributed over the network, although they can also be concentrated in hubs as meta-tasks (see above on polycentricity).

Blockchain

Here a technology comes into play that is currently experiencing a precipitous rise: blockchain (Hülsbömer and Genovese 2017). Blockchain gained notoriety thanks to the bitcoin cryptocurrency. In essence, however, it is just a distributed protocol that transparently records actors' transactions in a chronological memory: also known as a *ledger*. This ledger is not located in any particular place and is also not subject to central administration. Instead, it is distributed over the internet. It belongs to all and is administered by all. The cryptographic interlinking of blocks, in which the transactions are saved, prevents *ex post* alterations and provides a secure depiction of the temporal sequence of the transactions. Blockchain is a kind of globally distributed operating system for agreements between peers: The peers no longer need intermediaries and applications are running on the operating system that allow everyone access to the agreements. A blockchain system could replace contracts without agreements losing the binding character that today has still

to be created by way of law and the state. This binding character can be achieved via transparency and social influence through voting with one's feet: Someone who frequently fails to uphold agreements that are consultable by everyone, or who only implements them to the detriment of one side, will less often find partners who want to enter into new agreements. In this way, the inclusionary logic described above can find its operative basis: Inclusive-cooperative behavior is self-reinforcing and one's own needs are more likely to be satisfied, if the needs of one's peers are also taken into account.

Despite the generality of the blockchain protocol, it is not necessary to record all domains of society, since *interpersonal* relationships, above all, can manage entirely without transparent documentation. Blockchain is, above all, suitable for *transpersonal* mediations, in which persons who are unknown to one another can create an equal—peer-to-peer—basis of trust by means of transparency.

Summary and Discussion

Stigmergic Mediation

In a commons society, a stigmergic mediation based on qualitative information can be conceived as a form of indirect and emergent self-management for the purpose of communicative mediation of needs, resources, limitations, and goals. The principle of self-selection on the individual level leads to a similar shift in focus on the systemic level of the whole: Instead of organizing processes directly by means of central planning, the objective is rather to create the *conditions for social self-organization*, which then gives rise to stigmergically distributed network planning. Thanks to the inclusionary logic, the network effect (Yang 1997) comes fully to bear by way of self-reinforcing feedback: Inclusionary behavior is functional and creates the conditions for inclusionary behavior. Effectiveness (the degree of goal attainment) is high, thanks to the direct stimulus of need and direct peer-to-peer forms of mediation without intermediaries. The same applies for efficiency (the required outlay for goal attainment), since transaction outlays are minimal—in contrast to monetary mediation, whereby society has to make major outlays just for the purpose of maintaining and operating the monetary system and these outlays are useless as directly regards the satisfaction of needs.[32] This is

[32] Indirectly, the monetary system essentially provides social mediation in capitalism. But, in the first place, it is an additional system, which, so to say, duplicates the organization of flows of products and services on the monetary level. Secondly, it is self-reflexive: This is to say that more and more transactions relate exclusively to the movement of money. The extreme expansion of the financial sphere is an example. From an economic point of view, financial transactions are nothing but costs that society has to incur.

possible thanks to the multi-dimensional substantive quality of information, whose capacity for mediation via the qualitatively employed bandwidth is considerably greater than the one-dimensional, purely quantitative representational capacity of money. Stigmergic mediation takes place more on the transpersonal level of larger and more diverse systems—such as are present on the level of society as a whole—than in small units. For the transpersonal level, the *Stigmergic Law* can be formulated as follows: "Given enough people and commons, a person or commons will be found for every task that has to be done."[33] A blockchain operating system for agreements thus makes reached agreements transparent for all, and this provides the foundation for an, on average, highly binding character and a high degree of dependability on the basis of the free choice of the individual.

Knowledge and Capacity for Action

Is commons-based stigmergy another way of solving the *Hayekian problem of knowledge* (cf. Kathöfer and Schröter in the present volume)? The problem consists in the fact that in a society based on the division of labor, knowledge is always only contextual, local, limited, and dispersed. Friedrich von Hayek ([1937] 1948: 54) asked: "How can the combination of fragments of knowledge existing in different minds bring about results which, if they were to be brought about deliberately, would require a knowledge on the part of the directing mind which no single person can possess?"—and he concluded thereby that central planning is, in principle, impossible. In order to achieve capacity for action, he argued, it is necessary to reduce divided knowledge to manageable quantities and to subject it to a self-mediation. Per Hayek, the latter are "prices" and "competition" on the market, which produces "complex, seemingly intelligent structures, without need for any planning, control, or even direct communication between the agents." The last quote is not from Hayek, but rather a phrase from the Wikipedia entry on "Stigmergy" (en.wikipedia.org/wiki/Stigmergy; accessed April 8, 2018). This shows that market mediation by way of prices is one possible form of stigmergy; but it is the least favorable one conceivable, because the limited informational capacity of merely quantitative price signals does not allow for any qualitative coordination. Matters are otherwise in commons-based stigmergy, in which the effect of coordination is just as indirect and emergent as in the case of the price mechanism. Since, however, the basic motor is not valorization, but

[33] The Stigmergic Law draws on "Linus's Law," which Eric Raymond (1999) dedicated to the inventor of the Linux kernel, Linus Torvalds, and which refers to the freedom from error of open source software: "Given enough eyeballs [looking at the program code], all bugs are shallow."

rather need, the emerging coherent overall outcome is a society in which need-satisfaction is optimal for all.

As remarked at the outset, however, it should not be assumed that this comparison is about a simple "substitute" for money. Rather, the discussed problems of a society facing the abyss of money[34] can only be resolved when commons-mediated stigmergy is part of an *ex ante* reproduction, in which needs are not first reduced to one-dimensional, merely quantitative variables, but are mediated rather in their fully qualitative character.

Social Obligation

What happens with non-monetary debt relations—or, in other words, social obligations—that arise in a society based on the division of activity, if the ways in which obligations are met are interconnected? Do not these social obligations catch up with us and, in the end, find their operative expression in the form of money, after all? The question for a post-monetary society is hence whether and for what domains (inter-individual, collective, societal) *unconditional* reciprocity relations (see above) can be available.

It is clear that on the societal level, a conditionality of reciprocity—or, in other words, the mutual production of necessities of life via the creation and use of means and services for the purpose of satisfying needs—cannot be eliminated.[35] From a systemic perspective, it is irrelevant who makes the necessary contributions, as long as it is assured, on average, that it securely takes place. As shown, this can be achieved by way of stigmergic mediation. Hence, both individually and collectively, there is no compulsion to link utilizations and contributions on the societal level. This means that a commons collective is also under no compulsion to make sure that utilizations and contributions balance out on the collective level.[36] This is an important quality of a commons society, since it is often—say, in the domain of care—not possible to bring about such a balance: as is nowadays attempted by means, for instance, of an imposed economic and value-based equivalence

[34] "In the financial crisis, the whole world looked into the abyss and held its breath" (Steinmeier 2008). It is widely agreed that the crisis has not been overcome.

[35] On a finite planet with limited natural resources, the means of satisfaction of needs must be created from the available material substance in such a way that later generations too have comparable life chances. A society loses its future viability, if it lives from material substance, but does not renew and preserve the latter, as is tendentially the case today on a global scale.

[36] This does not hold for the transitional phase (cf. "transformation discourse"): In the transitional phase, it is precisely one of the qualities of the commons to be able to ensure that utilizations and contributions balance out, in order to be able to arrive at unconditionality at the level of individual reciprocity.

regime. This applies in the same way for the individual level: Even those people who are not able to make contributions have a claim to undiminished use of social wealth.

Moreover, if we free ourselves from the abstract economic idea of equivalence, it becomes apparent that there are numerous contributions to the social mode of life or to culture, in the broadest sense, that up to now—because they cannot be economically represented—do not exist: because they do not pay and are not economically perceptible. Strictly speaking, every development of individual possibilities in each unique form of human being is a contribution to this mode of life. This means that the linking of utilizations and contributions that has hitherto taken place first presupposes an individualized and privatized separation of economic performance that, in fact, does not exist at all. Utilizations and contributions can indeed be analytically distinguished. But concretely it is always only a matter of differently weighted moments of a unitary process of individual participation in social reproduction by way of individual development of life chances. It is only in a free society of decoupled reciprocity on both the individual and collective levels that this identity can come to the fore with its moments of utilizations and contributions, since all contributions are socially recognized.[37]

But what about inter-individual relations of obligation? Is not the moral sense that giving should be compensated by giving in return deeply ingrained in our historically acquired social relations? This can hardly be denied. But what has been socially acquired can just as well be unacquired again. What is decisive for the argumentation presented here, however, is that the unlearning of social relations of obligation on the inter-individual level of reciprocity is not a categorial precondition for unconditional relations of mediation on supra-individual levels. Whether, in a free society, we thus see ourselves as having obligations toward individual persons or, rather, we are able dispassionately to perceive the fundamental structural unconditional positive reciprocity is, for the moment, undecidable. But nothing hinges on this either.[38]

References

Acksel, Britta, Johannes Euler, Leslie Gauditz, Silke Helfrich, Brigitte Kratzwald, Stefan Meretz, Flavio Stein, and Stefan Tuschen (2015), "Commoning: Zur Konstruktion einer konvivialen Gesellschaft," in Frank Adloff and

[37] This finding does not presuppose that there are always only positive contributions. How such a society deals with individual destructive contributions cannot be discussed here.

[38] I would like to thank Johannes Euler for his extensive comments.

Volker M. Heins (eds.), *Konvivialismus: Eine Debatte*, 133–145, Bielefeld: Transcript Verlag.
Baier, Andrea, Tom Hansing, Christa Müller, and Karin Werner (2016), *Die Welt reparieren: Open Source und Selbermachen als postkapitalistische Praxis*, Bielefeld: Transcript Verlag.
Benkler, Yochai (2006), *The Wealth of Networks: How Social Production Transforms Markets and* Freedom, New Haven, CT: Yale University Press.
Dannoritzer, Cosima, and Jürgen Reuß (2013), *Kaufen für die Müllhalde: Das Prinzip der geplanten Obsoleszenz*, Freiburg: orange-press.
Deci, Edward L., Richard Koestner, and Richard M. Ryan (1999), "A Meta-Analytic Review of Experiments Examining the Effects of Extrinsic Rewards on Intrinsic Motivation," *Psychological Bulletin*, 125 (6): 627–668.
Exner, Andreas, and Brigitte Kratzwald (2012), *Solidarische Ökonomie & Commons: INTRO. Eine Einführung*, Wien: Mandelbaum.
Grassé, Pierre-Paul (1959), "La reconstruction du nid et les coordinations inter-individuelles chez Bellicositermes natalensis et Cubitermes sp. La théorie de la stigmergie: Essai d'interprétation du comportement des Termites constructeurs," *Insectes Sociaux*, 6: 41–83.
Habermann, Friederike (2009), *Halbinseln gegen den Strom: Anders leben und wirtschaften im Alltag*, Königstein/Taunus: Helmer.
Habermann, Friederike (2016), *Ecommony: UmCARE zum Miteinander,* Sulzbach/Taunus: Helmer.
Hayek, F. A. ([1937] 1948), "Economics and Knowledge," in F. A. Hayek, *Individualism and Economic Order*, 33–56, Chicago: University of Chicago Press.
Helfrich, Silke, and Heinrich-Böll-Stiftung, eds. (2012), *Commons: Für eine neue Politik jenseits von Markt und* Staat, Bielefeld: Transcript Verlag.
Helfrich, Silke, David Bollier, and Heinrich-Böll-Stiftung, eds. (2015), *Die Welt der Commons: Muster gemeinsamen Handelns*, Bielefeld: Transcript Verlag.
Hess, Charlotte (2000), "Is There Anything New Under the Sun?: A Discussion and Survey of Studies on New Commons and the Internet." Available online: https://dlc.dlib.indiana.edu/dlc/bitstream/handle/10535/384/iascp2000.pdf (accessed June 29, 2017).
Heylighen, Francis (2007), "Warum ist Open-Access-Entwicklung so erfolgreich?: Stigmergische Organisation und die Ökonomie der Information," in Bernd Lutterbeck, Matthias Bärwolff, and Robert A. Gehring (eds.), *Open Source Jahrbuch 2007*, 165–180, Berlin: Lehmanns Media.
Holzkamp, Klaus (1983), *Grundlegung der Psychologie*, Frankfurt/Main: Campus.
Hülsbömer, Simon, and Bill Genovese (2017), "Definition, Vorteile, Nachteile: Was ist Blockchain?" *Computerwoche*, 2 May.
H.-Osterkamp, Ute (1976), *Grundlagen der psychologischen Motivationsforschung 2*, Frankfurt/Main: Campus.
Küpper, Christian (2016), "Unter der Fuchtel des Unbewussten?" in *Forum Kritische Psychologie Spezial: Ausgewählte Beiträge der Ferienuni Kritische Psychologie 2014*, Hamburg: Argument.

Linebaugh, Peter (2008), *The Magna Carta Manifesto: Liberties and Commons for All*, Berkeley: University of California Press.
Marx, Karl (1938), *Critique of the Gotha Programme*, ed. C.P. Dutt, New York: International.
Marx, Karl (1976), *Capital: A Critique of Political Economy*, vol. 1, trans. Ben Fowkes, London: Penguin/New Left Books.
Mats, Rüdiger (2017), "Termiten aller Länder, vereinigt euch!," *konkret*, 1: 36–38.
Meretz, Stefan (2009), "Was sind Commons?: Commons in einer Gütersystematik," in *Contraste*, 303: 9.
Meretz, Stefan (2010), "Commons und Eigentum," Paper Presented At The Seminar Of The Bundeskoordination Internationalismus, Kassel, February 12–14.
Meretz, Stefan (2014a), "Keimform und gesellschaftliche Transformation," in *Streifzüge*, 60: 7–9.
Meretz, Stefan (2014b), "Keimform und Elementarform," in *Streifzüge*, 60: 10.
Meretz, Stefan (2014c), "Grundrisse einer freien Gesellschaft," in Tomasz Konicz and Florian Rötzer (eds.), *Aufbruch ins Ungewisse: Auf der Suche nach Alternativen zur kapitalistischen Dauerkrise*, Hannover: Heise Zeitschriften.
Meretz, Stefan (2015), "Commonismus statt Sozialismus," in Marxistische Abendschule (ed.), *Aufhebung des Kapitalismus: Die Ökonomie einer Übergangsgesellschaft*, Hamburg: Argument.
Meretz, Stefan (2017), "Peer Commonist Produced Livelihoods," in Guido Ruivenkamp and Andy Hilton (eds.), *Perspectives on Commoning: Autonomist Principles and Practices*, London: Zed Books.
Neeson, Janette M. (1996), *Commoners: Common Right, Enclosure and Social Change in England, 1700–1820*, Cambridge: Cambridge University Press.
Ostrom, Elinor (2009), "Beyond Markets and States: Polycentric Governance of Complex Economic Systems," Nobel Prize Lecture, Stockholm. Available online: http://www.nobelprize.org/nobel_prizes/economic-sciences/laureates/2009/ostrom_lecture.pdf (accessed June 29, 2017).
Ostrom, Vincent, and Elinor Ostrom (2009), "Rethinking Institutional Analysis and Development," interviewed by Paul Dragos Aligica, in Paul Dragos Aligica and Peter J. Boettke, *Challenging Institutional Analysis and Development: The Bloomington School*, 142–159, Oxford: Routledge.
Raymond, Eric S. (1999), *The Cathedral and the Bazaar: Musings on Linux and Open Source by an Accidental Revolutionary*, Sebastopol: O'Reilly Media.
Romer, David (2012), *Advanced Macroeconomics*, 4th edition, New York: McGraw-Hill Irwin.
Schäfer, Dieter (2004), "Unbezahlte Arbeit und Haushaltsproduktion im Zeitvergleich," in Statistisches Bundesamt (ed.), *Alltag in Deutschland: Analyse zur Zeitverwendung*, Forum der Bundesstatistik, vol. 43: 247–273.
Schlemm, Annette (2006), *Selbstentfaltungs-Gesellschaft als konkrete Utopie*, Osnabrück: Packpapier.

Scholz, Roswitha (2000), *Das Geschlecht des Kapitalismus: Feministische Theorien und die postmoderne Metamorphose des Patriarchats*, Bad Honnef: Horlemann.

Siefkes, Christian (2008), *Beitragen statt tauschen: Materielle Produktion nach dem Modell Freier Software*, Neu-Ulm: AG SPAK Bücher.

Siefkes, Christian (2013), "Freie Quellen oder wie die Produktion zur Nebensache wurde," in jour fixe initiative berlin (ed.), *"Etwas fehlt"—Utopie, Kritik und Glücksversprechen*, 255–272, Münster: edition assemblage.

Siefkes, Christian (2014), "Peer Produktion: Wie im Internet eine neue Produktionsweise entsteht," in Tomasz Konicz and Florian Rötzer (eds.), *Aufbruch ins Ungewisse: Auf der Suche nach Alternativen zur kapitalistischen Dauerkrise*, Hannover: Heise Zeitschriften.

Siefkes, Christian (2016), "Freie Software und Commons: Digitale Ausnahme oder Beginn einer postkapitalistischen Produktionsweise?," in *Navigationen*, 2: 37–53.

Sinn, Hans-Werner (2017), "Was uns Marx heute noch zu sagen hat," in *Aus Politik und Zeitgeschichte*, 19–20: 23–28.

Statistisches Bundesamt (2015), *Wie die Zeit vergeht: Ergebnisse zur Zeitverwendung in Deutschland 2012/13*, Wiesbaden: Statistisches Bundesamt.

Steinmeier, Frank-Walter (2008), "Rede von Außenminister Frank-Walter Steinmeier beim Handelskongress und Delegiertenversammlung des Hauptverbandes des Deutschen Einzelhandels (HDE)". Available online: http://www.auswaertiges-amt.de/DE/Infoservice/Presse/Reden/2008/081112-BM-HDE.html (accessed June 29, 2017).

Sutterlütti, Simon, and Stefan Meretz (2018), *Kapitalismus aufheben: Eine Einladung, über Utopie und Transformation neu nachzudenken*, Hamburg: VSA.

van Abel, Bas, Lucas Evers, Roel Klaassen, and Peter Troxler (2011), *Open Design Now: Why Design Cannot Remain Exclusive*, Amsterdam: BIS.

Winkler, Gabriele (2013), "Zur Krise der sozialen Reproduktion," in *Denknetz Jahrbuch 2013*: 119–133.

Yang, Yi-Nung (1997), "Essays on Network Effects," PhD diss., Utah State University, Logan.

4.3

The Post-Capitalist Feminism Cookie: The Main Course—A Commons-creating Peer Production as a Possible Future

Friederike Habermann

The theories are baked by men . . . a feminism cookie may be served as an accompaniment.

Ariane Brenssell and Friederike Habermann 2001: 241

1. A Look into Train Station Bookstores—and into a Possible Future

"Many thanks for sending an excerpt from your new book," writes an activist in January 2017, commenting on an email sent out by another activist announcing his publication on a post-capitalist economy. The response highlights a problematic aspect, however: "In your acknowledgements there is a long list of names—thirteen, to be precise. It is striking that these are all men's names. Two women's names follow, but the description suggests that their contributions were more on the level of support and language than on that of concepts and content." The author responds that this was "quite simply because only the men who were mentioned had contributed to the content."

Quite simply. But unfortunately, it happens all the time. And conversely, the feminist debates take place almost exclusively among women. Is this, in each case, the result of (unconscious) mechanisms of exclusion? In any case it means that each side assumes the debates on the other side to be irrelevant for its own work. Despite all the progress second-wave feminism has made toward equality, this is partly to do with experiences from the female or male subject positions. The term used in the past was standpoint theory.

In my book *Ecommony: UmCARE zum Miteinander* (2016), I try to integrate strands of debate from both sides. This strikes me as all the more urgent given

that the debate about needs-based economics, which has been marginalized for decades, could now solve the very problems we are facing at present.

Also in January 2017, at the 9th German Media Congress (9. Deutscher Medienkongress), Richard David Precht warned: "If, in twenty or twenty-five years, half the population no longer has a job—and this will very probably be the case—then you can no longer define a person's value by their output or proficiency, because this no longer makes sense. This would mean half of society would have to feel like losers, and that would end in civil wars." Society in its present state, he argues, is coming to an end, but "Purely theoretically, the dissolution of the old society could lead to a society which is—purely theoretically—better than before."

According to Precht, a large part of the population feels a great disquiet at the thought that bourgeois-democratic society might not continue as before. He argues that all the rage and extremism, and the criticism of the "lying press" (*Lügenpresse*), are fueled by this justified unease, then lead people to seek refuge in parties which offer no solutions for the future, but instead a return to the past.

In the words sung by the anarchist group Ton Stein Scherben, "When the night is deepest, the day is nearest" (or "the darkest hour is just before the dawn"). A society without money could be just such a new dawn. These days even train station bookstores sell books predicting a future in which such a society is at least imaginable, and thousands of people flock to events featuring the (male) authors of such books. The message emerging is that overcoming the previous understanding of property on the consumer side, and freeing the human desire for activity from compulsion and the logic of profit on the production side, could make a structurally collective form of life and economics more easily imaginable than simply continuing as before.

One of these authors is the world's best-known futurologist, the economist Jeremy Rifkin. He begins his 2014 book, *The Zero Marginal Cost Society: The Internet of Things, the Collaborative Commons, and the Eclipse of Capitalism*, with the words: "The capitalist era is passing . . . A new economic paradigm—the collaborative commons—is rising in its wake." In the book, Rifkin describes how technological developments are bringing about the gradual demise of capitalism. The main reason he cites is that production costs for every additional output unit will be reduced to (nearly) zero as a result of a "third industrial revolution," as is currently taking place in the areas of communication, energy, logistics, and 3D printing. He argues that "when the marginal cost of producing these goods and services approaches zero and the price becomes nearly free, the capitalist system loses its hold over scarcity and the ability to profit from another's dependency" (Rifkin 2014: 273).

The other, Paul Mason, is the former economics editor for Channel 4 News. Although he makes it clear in his 2015 book, *PostCapitalism: A Guide to Our Future*, that he does not write for train station bookstores, his book has nonetheless ended up in such places. What Rifkin deduces from the falling marginal costs of neoclassical economics, Mason analyzes from a Marxist perspective as a tendency for the profit rate to fall. He also, however, cites the exacerbation of the financial crisis and the sales crisis, and Kondratiev waves, a theory of long-term economic cycles. Both authors predict the same outcome: the price system will collapse, and the technological and economic developments will culminate in a new form of society organized in a "lateral" or "collaborative" way, as "commons" or "peer production" (all these expressions can be found in the work of both authors).

At the same time, they both point out that political choices must be made, right now, to facilitate this. Rifkin, the liberal, demands the destruction of internet monopolies, and Mason, the social democrat, sees the state as actually being the main instigator of transformation.

I sympathize with both approaches, even if I do not share all their predictions or conclusions. Yet both of them mainly emphasize technological and economic developments that go beyond conscious political action—it remains to be seen how much of this is strategic optimism. Mason offers a telling comparison with the contraceptive pill, first prescribed in 1960:

> Can laws, markets and business models really evolve dramatically to match the potential of info-tech? And could it be true that we as puny individuals can have any real impact?
>
> Yet, every day, a large part of humanity participates in a much bigger change, triggered by a different kind of technology: the contraceptive pill. We are living through the one-time and irreversible cancellation of male biological power. It's causing major trauma: watch the Facebook and Twitter trolling of powerful women.
>
> Mason 2015: 289

Despite the question in the second sentence about individual influence on large-scale transformations, this is ignored in this example, as it is elsewhere. The women's movement with its struggles disappears from view, and all strivings toward emancipation become insignificant in comparison to the invention of the contraceptive pill. Would that not mean, by implication, that women are only emancipated if they take hormones? Even for heterosexual cis women, who want neither to live asexually nor to have children, this is obviously not true, as there are numerous methods of contraception which were invented long before the pill. And much the same can be said about how

early societies were organized: without capitalism, that is, without the structural compulsion to turn money into more money; without labor, that is, without the appropriation of the surplus product from an activity by another person; without property, that is, without the right to exclude others from the use of a good unless one is using it oneself, and without money and exchange, that is, without any value relation that predetermines, when resources are exchanged, who still owes what to whom. Not only did all this exist, it was the norm. Of course these were not modern, global societies. And this is where our challenge now lies.

2. Feminist Precursors

> From the mid-nineteenth century, therefore, through to the 1870s, a wealth of material came to light that eroded and soon tore to shreds the old idea of the eternal character of private property and its existence from the beginning of the world. After agrarian communism had been discovered as a peculiarity of the Germanic people, then as something Slavic, Indian, Arab-Kabyle, or ancient Mexican, as the marvel state of the Peruvian Inca and in many more "specific" races of people in all parts of the world, the conclusion was unavoidable that this village communism was not at all a "peculiarity" of a particular race of people or part of the world, but rather the general and typical form of human society at a certain level of cultural development.
>
> Luxemburg [1925] 2013: 156

Since this quote from Rosa Luxemburg, however, another century has gone by, in which the knowledge on the commons again has gone lost almost completely. Today most people once again see property as something ahistorical and natural.

In contrast to the relative popularity currently enjoyed by visions of moneyless societies, the feminist works on this subject have never made it as far as train station bookstores. Nor do today's debates on "post-growth," mainly conducted by men, make any connections with pioneering feminist thinkers. When do they ever point out that Maria Mies, Claudia von Werlhof and Veronika Bennholdt-Thomsen have been advocating a "subsistence economy" for decades, that Carola Möller advocates a "community-based economics," Adelheid Biesecker and others a "caring economy" (*vorsorgendes Wirtschaften*), and Meike Spitzer and Uta von Winterfeld an approach based on sufficiency? And yet from the point of view of those who have been engaging with feminist economic approaches in recent decades, there seems

to be little that is new in the commons debate, the post-growth debate, or the debate on a society without money.

Of course "feminist economics" is a broad concept: there are many feminisms and many orientations within economic theory, and theoretically any combination of the two is possible. But what is meant here is neither games-theory-based reflections from a woman's perspective, as are sometimes to be found in the International Association for Feminist Economics, nor Keynes-inspired reflections on the (entirely reasonable) notion of "gender budgeting," that is, the practice of taking into consideration gender-specific inequalities in budgetary policy. In the German-speaking countries, since the 1980s, "feminist economics" has largely stood for analyses, mainly from an eco-feminist perspective, of the exploitation of nature, traditional women's or reproductive work, and the (post-)colonial North-South relationship—all of this combined with the positive vision of a "subsistence" society, free of money and the logic of exchange.

The foundations for this were laid by a work published in 1983 by the "women of Bielefeld" (*Bielefelderinnen*), Veronika Bennholdt-Thomsen, Maria Mies, and Claudia von Werlhof, entitled *Frauen, die letzte Kolonie: Zur Hausfrauisierung der Arbeit* (published in English as *Women: The Last Colony*, 1988). This was an extremely valuable contribution: building on Rosa Luxemburg's analysis, it shows that the aim of capitalism is not to permeate the world with capitalism, i.e. not to transform every kind of work into wage labor, but that on the contrary a vital element for the survival of capitalism is its imperialistic ability to exploit resources produced in a non-capitalist manner. In the Fordist era, that of the so-called welfare state, this includes the work of women, whether it is made invisible in the form of housework, or bought for lower pay, as "extra income" to supplement the breadwinner's wage. Equally valuable was the eco-feminists' critique of the use and abuse of nature.

Ultimately, of course, every emancipatory approach to economics must be a feminist one, since only an approach that avoids every relation of dominance can claim to be emancipatory. Conversely, the basic criteria in feminist visions of economics have always been similar to those in many other blueprints for a solidarity-based economy: a needs-oriented, caring or sustainable economy, organized on the principle of grassroots democracy, aiming at a new quality of life (cf. Möller 1997). Yet even today there is a systematic tendency to overlook reproductive or care activities, and therefore the prerequisites for what is generally understood as the "economy". "It really is unfathomable," as Carola Möller noted twenty years ago, "why it has so far been possible to make unpaid work appear, in the public consciousness, as non-existent and without value" (1998: 471).

Here the "women of Bielefeld" went further than Luxemburg: in their analysis they argued that the main element exploited in capitalism was not—as assumed in Marxism—wage labor (mainly carried out by men in the Global North), but subsistence labor (mainly carried out by women in the Global South). Claudia von Werlhof raises the question of whether capitalism is so incapable that it has not yet succeeded in integrating these masses into exploitation, into its system. According to her, the answer to the riddle is very simple: "everything is the reverse of what it seemed: the pillars of accumulation and growth are not the 10 percent free wage laborers, but the 90 percent unfree nonwage laborers; they are the truly exploited, the real 'producers,' the 'norm,' the general condition of the human being under capitalism" (Werlhof 1984: 257).

Subsistence encompasses unpaid production and reproduction. For the latter, the English term "care" has now become established in German-language discussions, emphasizing the positive element of reproduction. It then becomes possible to speak of extending the "logic of care" to production. Money divides individuals, as Veronika Bennholdt-Thomsen later also stresses in her book *Geld oder Leben* (Money or life, 2010); the immediacy of subsistence provision, in contrast, brings them together (2010: 46). However, the concept of subsistence for socialized economic activity beyond the market and the state has been repeatedly misunderstood. For many it evokes an image of isolated rural communes, where people live in small communities, grow vegetables on their plots of land, and cobble together their own houses. The individual longing for the countryside expressed by some proponents of subsistence may have contributed to this. Yet ultimately subsistence merely means relations of production beyond barter and/or oppressive systems.

The "women of Bielefeld" used the term "subsistence approach" (*Subsistenzansatz*) to stress the need for progressive self-liberation from capitalist, market-mediated constraints. The catchphrase "politicized subsistence," coined by Ulla Peters (1997), encapsulated the creation of collective structures of resistance beyond the state and the market more clearly, and connected more explicitly with an internationalist perspective. Yet even this could not eliminate the misunderstanding.

In the 1980s and early 1990s, the approach developed by the "women of Bielefeld" was a topic of lively debate within the women's movement, not least in the German-speaking countries. Yet these debates ran out of steam as economics fell out of fashion as a topic, after the "end of history" proclaimed by Francis Fukuyama.

Today Marxist, eco-feminist and queer feminist tendencies are coming together again under the catchwords "care" and "commons." The feminist Marxist Silvia Federici, who lives in the US, exhorts us to revisit the insight of feminists in the past, and to see reproductive work as a key sphere of human

activity, without which we could not create an alternative society. Reproduction as a whole, she argues, must be reconceptualized in a cooperative form (Federici 2010).

This has led to the emergence, in recent years, of a scene which is young in two senses, and sees itself as inspired to a considerable extent by the ecofeminist and queer-feminist work of J. K. Gibson-Graham (the joint pen name of the economic geographers Julie Graham and Katherine Gibson). The two writers applied queer theory as a way to expand thinking about economic conditions. They advocated a "collective disidentification" with capitalism, such as that propounded by Judith Butler in relation to heterosexuality and the binary gender order. By analogy with phallogocentrism (where the masculine takes center stage), they spoke of the "capitalocentric discourse": it was necessary, they argued, to trace the diverse economic practices beyond the (capitalist) market economy, and to recognize the spaces in which these practices already existed, in all their singularity and autonomy (2006).

In 2012, after participating in a kind of cross-generational seminar on commons-based economic activity and subsistence, the Austrian commons specialist Brigitte Kratzwald wrote:

> So after ten years of studying different tendencies within the critique of capitalism, I had reached a place where others had already stood twenty years ago. Somehow these discussions came to nothing; the knowledge and the proposed alternatives disappeared; there are scarcely any traces of them to be found on the internet. Twenty lost years, in which the spiral of destruction has been able to keep on turning, reinforcing the impression that there was no alternative. So have we seen it all before?[1]

3. *Ecommony: UmCare zum Miteinander*[2]

In my book *Ecommony: UmCARE zum Miteinander* (roughly translatable as "Ecommony: Care and the return to communality"), I try to connect the discussions outlined at the beginning of this paper with their (eco-)feminist precursors, and with current (queer) feminist debates. Here is an outline of the core ideas.

[1] https://kratzwald.wordpress.com/2012/04/29/politisierung-der-subsistenz (accessed September 2, 2017).

[2] Translator's note: "UmCARE" is a play on words, combining the English "care" with the German "Umkehr," meaning a change, turnaround, or reversal. *Miteinander* conveys an idea of togetherness, collaboration, etc. So the title of the book might be translated roughly as "Ecommony: Care and the return to communality."

Playing on the word "economy," I speak of "ecommony," to emphasize the potential which the commons hold for the whole of society. Starting from the description of current approaches to alternative economics, I was struck by the fact that the more recent forms can be described as commons-based peer production, following the same principles as those applied to free software.

Their main principles are:

possession rather than ownership: what counts in commons is who actually needs and uses something, and not the right to exclude others or to sell it;

contributing rather than exchanging: people become active from an inner motivation, and not because they are forced to sell their labor.

In the language of economics: the one describes the consumer side, the other the production side.

Let us begin with the former: the crucial thing about the commons concept is that others can only be excluded from a good if someone is already using it (that is, they need it). It was with this in mind that Luxemburg spoke of village communism: land is the prototype for commons; in the Middle Ages not only grazing land but also arable land was regarded as commons, and shared out among families. Yet in-keeping with this distinction between possession and ownership, real estate can also be considered as commons: a person who lives in an apartment possesses it, but cannot sell it—this was the practice in Cuba until 2011.

Goods such as software are predestined for free access, because copying them does not limit access for anyone. The same applies to all other non-rival goods. But "impure public goods" such as water supply, wastewater disposal, or any kind of public transport and infrastructure where consumption involves a certain rivalry, can also be organized according to the principle of possession instead of ownership—probably very few people would think of using them excessively just because they are free. Needs are met relatively quickly.

Even food—to name what is probably the most rivalrous among the rival goods—can be categorized in this way: food can only be "possessed" if it is eaten. Every hotel guest at the breakfast buffet is aware of this difference between "taking possession" and "taking ownership"—and if anyone is not aware of it and starts to pack food for later, the hotelier will make sure the misunderstanding is cleared up. And yet the food that is not taken often lands in the trash. People are once again becoming reluctant to throw away food, as shown by the "foodsharing" initiatives appearing in nearly all the larger towns in Germany and Austria.

Possession rather than ownership can also refer to everyday objects, however. On the one hand those where serial use is possible, as they are no longer needed after use. The boom in "public bookcases" reflects the fact that more and more people want to take items they are no longer using and make them freely available to others. This trend is also reflected in "free stores" or "give-away shops," which work like second-hand shops, just without money and without the logic of exchange. These are not to be understood as places where things are "given," that is, transferred from one private owner to another, but as places where people bring things that have "fallen out of possession," since they are no longer used.

Parallel or alternating use is also possible, for example in the case of tools, which—unlike books—are not "finished with" at some point. For this there are "user communities," "libraries of things" or "borrowing shops," and open workshops, equipped for woodwork or metalwork, bike repair or sewing workshops, or "FabLabs" with 3D printers.

After all, not only products but also the means of production should be in the possession of those who need (and use) them. The increasing decentralization and thus democratization of production opportunities means—and this is Rifkin's central thesis—"that anyone and eventually everyone can access the means of production, making the question of who should own and control the means of production irrelevant, and capitalism with it" (2014: 112).

Giving away what "falls out of one's possession" can be described with the words "share what you can." In addition, this interim principle implies the sharing of knowledge ("knowledge commons") and of skills. This in turn merges into the second basic principle, "contributing rather than exchanging."

In a "commons-creating" (Silke Helfrich)[3] peer production, action is motivated by need. This does not have to mean enjoyment; it can also be a feeling of responsibility. It is no coincidence that it is predominantly feminist theorists who, based on the recognition of a lifelong mutual dependency, emphasize this broad spectrum of motivations. Brigitte Kratzwald (2014) sums it up with the phrase "between pleasure and necessity," while the theologian Ina Praetorius, who lives in Switzerland, describes such motivations for action as the "rediscovery of what has been taken for granted" (*Wiederentdeckung des Selbstverständlichen*): the fact that most of us become active as a matter of course when we see the necessity for it. "It can be taken for granted that humans, as creatures who are free in relatedness, want to increase more than their personal benefits" (2015: 54).

[3] For example in her lecture "What Do We Mean by Economics and the Commons?" at the conference Economics and the Common(s): From Seed Form to Core Paradigm, at the Heinrich Böll Foundation in Berlin on March 22, 2013.

This should not be confused with altruism. Without the logic of exchange, nobody has to limit themselves to the abilities they can utilize on the market—either restricted to the low skill sector or narrowed down to a specific skill which then has to be used throughout their life. Nor does anyone have to do everything for themselves (as in DIY). This would mean an end to the "structural hate" in the competition-oriented (labor) market; a system of "structural communality" (Stefan Meretz), in which we build upon that which others create. But without the constriction of community, and without having to be better people. We would simply live in a system in which different things were taken for granted. While at present only those who can out-compete their fellow humans are permitted to be productive for society, this alternative system would aim to make cooperative activity something that is taken for granted in society once again.

Not every activity would be popular, and yet there would be numerous opportunities to replace these with mechanized work, to make them more pleasant, to distribute them by lot among all those concerned, or simply to dispense with them. If we cannot exploit anyone by means of unjust economic structures, then perhaps certain things will no longer be produced—but this will then be a conscious decision.

4. Transformation Without a *Technical Fix*

So how is transformation possible, if technological developments are not going to do it for us? Just to make it clear: I do read the news, I am aware of wars, naked oppression, and all the dangers that threaten us. And yet real change—beyond mere shifts in the boundaries of power—can only ever begin with the subject. The crucial fact here is that we only ever exist in the context of society.

It is with this in mind that I use the expression "peninsulas against the current" ("Halbinseln gegen den Strom"), the title of my 2009 book about approaches to alternative economics. What I mean is spaces in which people create a different reality for themselves, to some extent, and see where this might take them. They thus create social contexts which allow people to develop in different ways than would be possible outside such "peninsulas." Ultimately, new horizons of thought and action only emerge in the interplay between changes in everyday material/economic life, and changing identities; the two things are mutually dependent.

I therefore end some of my presentations with the word *Queerémos!*, to make clear the political consequences of my subject-based theory of hegemony. Printed on a T-shirt, and alluding to the battle cry *Venceremos!*—

We will overcome!, it allows me to summarize my thesis: not only must our own identity be "queered" (in line with Judith Butler's feminist theory: as a disidentification with the roles assigned to us), and not only must the external social conditions be overturned (though Marx's theory is not restricted to this what has largely been overseen), but both our own identity and the social context must be the target of change. Only changes to the one pave the way for changes to the other.

Today very few of these projects explicitly call themselves feminist. Nonetheless, there is often a high level of queer feminist consciousness in contexts where alternative economic forms are practiced. This may be due to the history (of ideas) of feminist economics, and to the fact that proponents of the feminist movement have always paid particular attention to their own behavior, and to matters of everyday life. Even today the aim is often not to "opt out" altogether, but to explore ways to fit "dissident practices" into one's own everyday life, as Carola Möller (Stiftung Fraueninitiative 2006) phrases it. Doing something differently from the way we have learnt changes us, our fellow humans, and the whole world. This is where the utopian surplus of today's practices lies.

In recent years in Germany the English term "Care Revolution" has become both the title of conferences and a slogan at demonstrations. It was coined by the Hamburg social scientist Gabriele Winker. Speaking of "social reproduction in crisis," she combats the understanding of crisis as something solely related to banks, markets or the euro. Many people, she points out, lack time and/or money for caring activities: the unwavering pursuit of neoliberal policies, as a triad of liberalization, privatization and austerity, leads to a "double privatization" (an expression used by Adelheid Biesecker et al. 2007) of such activities. On the one hand, in neoliberalism, commercialized privatization is becoming more and more firmly established, although this is ultimately counterproductive for the profits of companies (Winker 2015: 53). On the other hand, the withdrawal of the state and the resulting transfer of previously public care services to private companies, especially in the areas of education/childcare and nursing, lead to rising prices, which increasingly cause private households to take over these activities. And, as studies of time use prove, this leads almost seamlessly—as ever—to an increase in women's work.

The limited rationalizability and therefore the limited profit in care work has always meant, in capitalism, that this is outsourced to underprivileged segments of the population, be it women in general, or (as in the past) black slaves, or (as is increasingly the case today) migrants in global care chains—though it is well known that in these cases too such activities are mainly left to women.

For more and more people, this criticism leads to the question of how the distribution and organization of care can be arranged in such a way that a

good life is possible for everyone. And it is in this context that I consider to what extent the feminist concept of care is connected with commons.

While both are based on cooperation, beyond the logic of the market and property, the main difference is generally seen as being that commons-based peer production works on the assumption of independent "peers" or individuals, while care centers on dependency; the parent-child relationship is seen as paradigmatic. The image of asymmetric relationships therefore predominates. But as the focus shifts from peer production to commoning, a different picture emerges: both caring and commoning are motivated by care or concern about something (*Sorge um etwas*).

At the same time, in keeping with the idea of care or concern, the different attitude to nature can be seen as another thing that care and commons share. Both approaches are strongly linked to an understanding of nature such as that expressed by the indigenous concept of "Pachamama" (Mother Earth): nature is not seen as separate from humans, and as an exploitable resource; instead humans are to be understood as a part of nature; in this sense the original indigenous expressions for *buen vivir*—generally rendered as "good living"—can perhaps be better translated as "good living together."

Care activities are focused on the well-being of others, and therefore do not lend themselves to profitable exploitation. Thus those who work in this area, mostly women, often have fewer problems overcoming the logic of exchange, because the logic of care allows a different way of looking at economic activity as a whole: if giving food to a sick person is care, why should growing the food not be care? If putting a child to bed is care, why should producing the bed not be care?

Furthermore, the area of reproductive work, or more precisely care work, highlights something that is true of any form of activity: that it inevitably becomes alienated as long as it is carried out in exchange for food (German: *Lebensmittel*, literally "the means of life"), and therefore under compulsion. Because even if it is true that it makes a difference who cares for a person or raises a child, it makes just as much of a difference for any activity we see as a calling. For artists of all kinds this is obvious. But is it really different for a carpenter? A baker? A hairdresser or another craftsperson? What about you? And what would proponents of "extreme ironing" say? The more the people who carry out apparently mundane work are able to influence the shape of this work, free of the constraints of wage-earning and the pressure to compete, the more difference it ultimately makes *who* performs each activity.

Moreover, if we are to avoid constructing people as inferior in order to be able to impose the less profitable reproductive tasks on them, then the necessary prerequisite is a society in which the logic of exchange is overcome,

and with it the discrepancy (caused by the compulsion to pursue profit) between the evaluation of "productive" and "reproductive" activities.

The word "construct" ("constructing people as inferior") is deliberately chosen here, since from a queer feminist perspective this is about more than the mere distribution of jobs to men and women, white and black people, or Germans and migrants: in every society, what women are, what black people are etc. is only realized in accordance with the hegemonic conditions. Pre-structured by the capitalist logic of valorization, this is nonetheless actively co-produced by the subjects who profit from it (men, white people etc.) (cf. Habermann 2008 and 2013).

This means—in contrast to what is at least implicitly argued in many left-wing theories, including current ones—that there is no main contradiction; that is, there is no one relation which, if it were overcome, would automatically lead to the overcoming of other relations of domination. It also means that it is not capitalism per se that causes racism, sexism etc., but that it "only" gives structural support for dividing people into identity categories. Ultimately, however, it is racist and sexist behaviors, even if they are embedded in corresponding structures, which construct these identity categories, in the process of creating or (often unconsciously) defending privileges (in what Gramsci would call the "struggle for hegemony"). It is with this in mind that I speak of a "subject-based theory of hegemony" (cf. Habermann 2008).

Dividing people into identity categories to protect privileges—be it access to resources, a favorable division of labor, power over the bodies of others, or simply a feeling of superiority—is not just a phenomenon of capitalism, as shown by societies which preceded it in history. There can be no adequate guarantee that this kind of privilege-protecting identity formation and associated power relations would no longer exist without capitalism; the struggle for this will perhaps always remain an emancipatory process. It is precisely this that Jacques Derrida (1992) refers to as *démocratie à venir*, "democracy to come." Yet it is nonetheless crucial to practice a form of economy which eliminates the structural contradiction between reproduction and the pressure for rationalization.

Queer feminism aims to allow all people (at the very least) to be what they want to be—as the development not of a pre-given natural identity, but of the potential that arises in this interplay between the "real" and society. This is only possible, however, if we also change the conditions of existence in this world.

For a vision of the day after tomorrow, we need concepts and experiences which break with the basic assumptions and concepts criticized above, which do not relate to capitalist reality. Concepts which, in the search for fundamental alternatives, sharpen our senses to the logics of a new "art of coexistence" (Acksel et al. 2015: 139).

Such new categories cannot be thought up while sitting at a desk; they can only emerge in the practices of alternative economics. But the more we become aware of the new ideas emerging, the more clearly we can deal with these politically, and create transformations.

5. MOVE Towards Utopia

It is still January 2017. Under the slogan "MOVE: Miteinander Offen Vertrauensvoll Emanzipatorisch der Zukunft entgegen, dem Wachstum entwachsen, die Utopie leben" (Together, open, trusting, emancipatory; toward the future, outgrowing growth, living utopia), people are coming together for the first time from different political "catchments," people who already live in their particular contexts, and believe that there should be a society without money, in the sense of a society based on needs and abilities. What is planned is a big joint summer meeting to give visibility to this emancipatory vision, in contrast to the gloomy forecasts which currently dominate the world.

Anyone accustomed to seeing such structures dominated by networks of men will be astonished: men make up only 25 percent; three quarters of those driving this movement forward are women.

Perhaps the history of feminist economics has not fizzled out after all, or not as much as a glance into train station bookstores—or the remaining theoretical section of this book—would suggest.

References

Acksel, Britta, Johannes Euler, Leslie Gauditz, Silke Helfrich, Brigitte Kratzwald, Stefan Meretz, Flavio Stein, and Stefan Tuschen (2015), "Commoning: Zur Kon-struktion einer konvivialen Gesellschaft," in Frank Adloff and Volker Heins (eds.), *Konvivialismus: Eine Debatte*, Bielefeld: Transcript.

Bennholdt-Thomsen, Veronika (2010), *Geld oder Leben: Was uns wirklich reich macht*, Munich: oekom.

Bennholdt-Thomsen, Veronika, Maria Mies, and Claudia von Werlhof ([1983] 1991), *Frauen, die letzte Kolonie: Zur Hausfrauisierung der Arbeit*, Reinbek bei Hamburg: Rowohlt.

Bennholdt-Thomsen, Veronika, Maria Mies, Claudia von Werlhof (1988), *Women: The Last Colony*, London: Zed Books.

Biesecker, Adelheid, Claudia von Braunmühl, Christa Wichterich, and Uta von Winterfeld (2007), "Zu den Auswirkungen der doppelten Privatisierung," *Femina Politica: Zeitschrift für feministische Politikwissenschaft*, 02/2007, Leverkusen: Verlag Barbara Budrich.

Brenssell, Ariane, and Friederike Habermann (2001), "Von Keksen und Kapitalismus: Intervention gegen 'männlichen' Universalismus in Theorien zum Neoliberalismus," in Mario Candeias and Frank Deppe (eds.), *Ein neuer Kapitalismus? Akkumulationsregime—Shareholder Society—Neoliberalismus und Neue Sozialdemokratie*, 241–264, Hamburg: VSA.

Derrida, Jacques (1992), *The Other Heading: Reflections on Today's Europe*, trans. Pascale-Anne Brault and Michael B. Naas, Bloomington: Indiana University Press.

Federici, Silvia (2010), "Feminism and the Politics of the Commons." Available online: http://www.rebelnet.gr/files/federici-feminism-and-the-politics-of-commons.pdf (accessed September 3, 2017).

Gibson-Graham, J. K. (2006), *A Postcapitalist Politics*, Minneapolis: University of Minnesota Press.

Habermann, Friederike (2008), *Der Homo Oeconomicus und das Andere: Hegemonie, Identität und Emanzipation*, vol. 1 of the series Feminist and Critical Political Economy, eds. Uta Ruppert and Brigitte Young, Baden-Baden: Nomos.

Habermann, Friederike (2013), *Der unsichtbare Tropenhelm: Wie koloniales Denken noch immer unsere Köpfe beherrscht*, Klein Jasedow: Drachenverlag.

Habermann, Friederike (2016), *Ecommony: UmCARE zum Miteinander*, ed. Stiftung Fraueninitiative, Sulzbach: Ulrike Helmer-Verlag.

Kratzwald, Brigitte (2014), *Das Ganze des Lebens: Selbstorganisierung zwischen Lust und Notwendigkeit*, ed. Stiftung Fraueninitiative, Sulzbach: Ulrike Helmer Verlag.

Luxemburg, Rosa ([1925] 2013), "Introduction to Political Economy," trans. David Fernbach, in *The Complete Works of Rosa Luxemburg*, ed. Peter Hudis, vol. 1, 89–300, London: Verso. Unfinished manuscript, published posthumously; original title "Einführung in die Nationalökonomie." Available online: http://www.mlwerke.de/lu/lu05/lu05_593.htm (accessed September 3, 2017).

Mason, Paul ([2015] 2016), *PostCapitalism: A Guide to Our Future*, New York: Farrar, Straus and Giroux.

Möller, Carola (1997), "Überlegungen zu einem gemeinwesenorientierten Wirtschaften," in Carola Möller, Brigitte Bleibaum, Ulla Peters, Lilo Steitz, and Alena Wagnerová, *Wirtschaften für das "gemeine Eigene": Handbuch zum gemeinwesenorientierten Wirtschaften*, 17–32, Berlin: Trafo.

Möller, Carola (1998), "Die gesellschaftliche Gesamtarbeit neu gestalten," *Das Argument: Zeitschrift für Philosophie und Sozialwissenschaften*, no. 226: *Anders wirtschaften, anders arbeiten*, issue 4/1998, 469–486.

Peters, Ulla (1997), "Jenseits des Schrebergartens: Politisierung der Subsistenz—Perspektive für einen feministischen Internationalismus?" in Schwertfisch (ed.), *Zeitgeist mit Gräten: Politische Perspektiven zwischen Ökologie und Autonomie*, 65–73, Bremen: Yeti Press.

Praetorius, Ina (2015), *The Care-Centred Economy: Rediscovering What has Been Taken for Granted*, Berlin: Heinrich Böll Foundation.
Rifkin, Jeremy (2014), *The Zero Marginal Cost Society: The Internet of Things, the Collaborative Commons, and the Eclipse of Capitalism*, New York: Palgrave Macmillan.
Stiftung Fraueninitiative et al., ed. (2006), *Dissidente Praktiken: Erfahrungen mit herrschafts-und warenkritischer Selbstorganisation*, Königstein: Ulrike-Helmer.
Werlhof, Claudia von (1983), "Der Proletarier ist tot: Es lebe die Hausfrau," in Veronika Bennholdt-Thomsen, Maria Mies, and Claudia von Werlhof, *Frauen, die letzte Kolonie: Zur Hausfrauisierung der Arbeit*, 113–136, Reinbek bei Hamburg: Rowohlt.
Werlhof, Claudia von (1984), "The Proletarian is Dead: Long Live the Housewife?", in Edith Hoshino Altbach, Jeanette Clausen, Dagmar Schultz, and Naomi Stephan (eds.), *German Feminism: Readings in Politics and Literature*, 254–264, Albany: State University of New York Press.
Winker, Gabriele (2015), *Care Revolution: Schritte in eine solidarische Gesellschaft*, Bielefeld: Transcript.

4.4

Trialogue: Implicit and Explicit Views of Human Nature

Friederike Habermann, Stefan Meretz, and Christian Siefkes

(1) Why One Should Make One's Own View of Human Nature Explicit—and Why It Preferably Should Not To Be Too Detailed

Christian Siefkes

Whoever talks or thinks about how society could or should be organized has necessarily to deal with the question of how human beings would presumably behave under different circumstances. To the extent that one does not want to be limited to the current condition of society or to earlier or elsewhere existing relations, empirical observation will not get one far. Instead, one needs a theoretical model of human behavior that makes it possible to predict behavior that can be expected under circumstances that are not observable today. Such a model of human behavior roughly corresponds to what is commonly known as a "view of human nature"; hence, I will make use of this somewhat more concise term.

In order to make statements about human behavior in a hypothetical scenario, one thus always needs a view of human nature, if one wants to say something more than "don't know." Two things are important here:

1. One should make one's own view of human nature explicit, instead of simply allowing it to operate implicitly.
2. Ideally, the view of human nature on which one's argument is based should not involve too many presuppositions.

Point (1) is important, since otherwise one leaves one's public or interlocutor confused and frustrated. If one's view of human nature is merely implicit, one will often get reactions like "But people are not like that" or "To do this, you first need new people, whom you have to produce by way of forced re-education." (This has already happened in the context of our

project.) Of course, even an explicit view of human nature can be rejected with a "People are not like that," but at least it is, then, clear to all parties what exactly they are talking about. And when one's own view of human nature is not formulated as a mere postulate, but is justified as empirically secured knowledge, then any objections that are to be taken seriously have also to be situated on this level of theoretical justification, instead of appearing simply as counter-postulates.

Point (2) is less important, since if one has well-founded knowledge, then it makes sense to use it too. The emphasis is placed here on "well-founded," since if one builds one's own theory on insecure foundations, one weakens it unnecessarily. But even if it is theoretically well-secured, in considering additional details of the view of human nature, one should ask oneself if they are needed at all or if one's own argument can do without them. The latter option offers the advantage that others can follow and accept the argument more easily, without having to evaluate the additional elements involved in the underlying view of human nature.

A further advantage of doing without additional assumptions is that one's argument is not damaged, in case one of these assumptions should turn out to be erroneous. There is rarely absolute certainty, after all.

The unrealistic conceptions of others—for instance, the typical economic textbooks—should be criticized. Nothing would be gained, however, by replacing reductive and misleading models like the *homo economicus* by other equally reductive models like, say, the *homo cooperativus* (Rogall 2002).

(2) Why Views of Human Nature—and Humans Themselves—Can Never Be Independent of Their Society

Friederike Habermann

Exactly: A view of human nature is not a matter of wishful thinking, but rather every bit as much a question of scientific knowledge as other considerations regarding transformation. I do not want only to call for this, but also to provide it.

From a feminist and anti-racist perspective, the fact that human beings are always part of their society is a platitude. For why was it so difficult in the nineteenth century to argue that women or black people are not less intelligent than white men? Because it was not only perceived but also made true that, as a rule, they did not correspond to the hegemonic understanding of a rational personality.

It was Judith Butler (1990) whose queer-feminist approach made it clear that, as against the accepted division between a given differing sex, on the one hand, and socially-constructed gender, on the other, the cultural influence is inseparable from our bodies. For example, women in the Stone Age were not the weaker sex of the nineteenth century, and today's toned beauties from the health club look different than the ideal of the Baroque period. How much estrogen we have in our bodies depends on how much pork we eat, and how much testosterone our bodies produce is, among other things, a result of whether we follow a traditionally female life path or a classical male career. But this is not only limited to aspects of gender: The age at which we die is essentially influenced by whether we are privately or publicly insured (in the case of forty-year-old women in Germany, the difference is seven years) and by what neighborhood we live in (in many western European cities, the difference is up to ten years; in Glasgow, for men, it is thirty years). But we cannot simply "strip off" beauty ideals, eating habits, career, health insurance, and neighborhood, in order to arrive at a "natural" life expectancy.

The merging of the biological and the social applies still more for our modes of behavior. The most recent findings of neurobiology show precisely this. Thus, genes are not only continually regulated by environmental influences; research in epigenetics demonstrates that environmental experiences are crucial to whether and, if so, how strongly a gene gets expressed (cf. Bauer 2006: 52f.).

Similar observations apply to the development of our brains. Thus, according to the Canadian doctor and author, Gabor Maté, everyone is inseparable from the environment in which he or she grows up. For precisely this reason, it is no surprise that the view of human beings as naturally individualistic and egoistic persistently finds confirmation in our competitively-oriented society.

Social relations prescribe a certain rationality by which individuals must abide, if they want to exist within these relations. If they act, then, in accordance with this rationality, the basic social relations are reproduced through their action. Since people do not see any alternative, they experience their behavior as "natural."

Only in one single respect, per Maté again, should one speak of "human nature": "We have a human need for companionship and for close contact, to be loved, to be attached to, to be accepted, to be seen, to be received for who we are."[1]

[1] Quote from the film *Zeitgeist: Moving Forward* (2011); Available online at: https://www.youtube.com/watch?v=4Z9WVZddH9w (accessed April 15, 2018).

In the same spirit, Joachim Bauer makes clear that—only seemingly paradoxically—it is precisely the quest for recognition that, in our society, brings people to strive for financial success and to behave competitively and egoistically to obtain it: "From the point of view of our brains, all the goals that we pursue in our normal everyday lives—whether as regards education or career, financial goals, purchases, etc.—have their deep, mostly unconscious 'sense' in the fact that we thereby are ultimately aiming at interpersonal relationships, i.e. we want to acquire or preserve them" (Bauer 2006: 39).

This does not mean that there would be no more egoism and competition in an ideally organized society. When it is a matter of breaking up the view of human nature as being driven by egoism, this does not imply that in a "good" society, people would exclusively honor altruism and total self-sacrifice. But it obviously makes a difference whether we live in a society in which the asocial qualities receive the greatest recognition (because they represent the absolute precondition for success) or we live in a society in which these conceptualizations would be recognized as false oppositions and overcome, because only very few activities are covered by them and (re)production is accordingly organized in such a way that they have hardly any significance in day-to-day life.

(3) Why We Need a Concept of Human Being and of Society

Stefan Meretz

Happily, we do not contradict one another much. Nonetheless, I would place a couple of accents differently. In the first place, I do not like to use the expression "view of human nature," since for me it is inextricably bound to wishful thinking. I have often had to hear how: "Your utopia only works if you start from a certain view of human nature." Explicitly or implicitly, images of what we would like to be the case are—rightly—rejected, but, at the same time, the obtaining of a scientific concept is completely negated. The baby is thrown out with the bathwater.

I am trying to make clear that we need a scientific concept: i.e. one that is well-founded and hence also susceptible to criticism in scientific discussion. In fact, everyone who deals with theories of the individual or of society—whether directly or indirectly—must rely on such a concept. To dispute this merely means reproducing common everyday conceptions and redefining the behavior that we experience on a day-to-day basis as something natural—as you have explained, Friederike.

My "concept of human being" is an indissolubly double one: It is identically the concept of the social human being in human society. When I use the word "identical" here, I am doing so in the Hegelian sense of the identity of identity and difference: The human being and society are identical, but also different. It is difficult to think the simultaneity of identity and difference in the mainstream of an analytical formal-logical theory of knowledge. The latter has first to bring together disjoint particles, in order to produce an interrelationship, instead of starting from the assumption that, in the real world, these particles are already the interrelationship in which they can distinguish themselves as individual entities. Considered from this perspective, the idea that human beings come together to found a society is absurd. For example, as agreeable as the demand for "cooperation instead of competition" may be, it is misleading. Human-social existence *is* cooperation. Society *is* a cooperative set of interrelationships. Competition *is* a form of cooperation. Hence, the question is not whether we cooperate, but only how. And what historically specific psychological equipment we have to acquire, in order to take part in the dominant form of cooperation—hence, how we have to be able to think and feel, in order to want and be able to act—depends on this "how."

A concept of human nature is one of potentiality. It grasps what people are able to be able to do. As in our experience, they can behave competitively in such a way that they do so at the expense of others. Is competition, therefore, part of their nature? No. But competition as historically specific form of cooperation belongs to the domain of human possibilities. It is possible to organize society according to a logic of exclusion: i.e. the development of one person takes place at the expense of another. From the point of view of a theory of the individual, however, it belongs just as much to the domain of human possibility to organize society according to a logic of inclusion. But this does not require us to start from the assumption that "inclusion" is true human nature. Thus, we recognize that in the question of what social relations are possible, the focus must be placed on the aspect of social structure, which predetermines the matrix for individual action—and not on assumptions about what human beings are like. We can reject ontological assumptions. But along with them, we have also to reject all those assumptions that try to stylize the massively observable behavior of real people under real conditions of competition and exclusion into how human beings are as such. Under conditions in which structurally one person always prevails at the expense of another, since this corresponds to the suggested action matrix, it is subjectively functional to do precisely that. There are good reasons to play along, since the game secures one's own existence. But there are also good reasons not to play along with the game of exclusion and to conduct research into the possibility

of relations in which the development of one person is not a limitation to, but rather a precondition for the development of others.

This is the background to why I would not share Maté's suggestion on human nature that you cite, Friederike. The usual dichotomization appears in the postulated "need for companionship": I have a need for something that I am not. And if I add the alleged need for "close contact," matters become even more difficult: Why should it be so? Cannot people also exist (and be happy) without this? Analogously to cooperation, the same rule applies here: Close contact and companionship is one form of living out human sociality, but it is not *the natural* form. The quote from Maté gives me the impression of a (simple) inversion of the current relations: instead of isolation, distance, hatred, exclusion, discrimination, denigration, now contact, proximity, love, inclusion, acceptance, embrace. Just as the former does not represent "human nature," neither does the latter. But both are evidently possible. The question is under what conditions which mode of behavior can develop socially. It appears almost crazy, however, to have to argue that the second option also belongs to the domain of human possibility. It is Maté's merit to have highlighted this possibility; to pronounce its concrete realization as natural, however, is not helpful.

To summarize: We need a concept of the *social nature* of human beings. Such a concept of potentiality allows us to conceive social relations "after money." That this is challenging is obvious. The "monetary society" that we have now creates a structural action matrix in which competitive behavior is rewarded, because it works and secures one's existence. A "post-monetary society" that is worth striving for needs to confront a dual task: In the process of constructing a new action matrix, in which inclusive behavior is rewarded, because it works and secures one's existence, we must change ourselves in such a way that we leave behind inherited modes of behavior and appropriate ourselves anew. This is a major undertaking. But people are able to be able to do it.

(4) Concept of Human Being and Social Organization

Christian Siefkes

Both of you say that assumptions about human beings are of limited relevance, because people, such as we are able to observe them, are always shaped by social structures and typically behave in the way that is expedient within the framework of these structures. Hence, what is needed are other, better structures, in which it makes more sense to work with others instead of

against them—"in which inclusive behavior is rewarded, because it works and secures one's existence" (Stefan) and in which not "the asocial," but rather the more social "qualities receive the greatest recognition" (Friederike). I totally agree with this, but what follows from it is the crucial question: What could such structures look like and how could they function?

If it is the structures that are at issue, then it is not enough to limit oneself essentially to the negation of existing structures and their functional principles. Instead, what is needed is clearly to describe the alternative structures "in which inclusive behavior is rewarded"—one cannot merely postulate this rewarding or recognition of the desired behavior, but rather one has to show how it comes about. And here I find it problematic when Stefan (in his contribution to this volume) instead formulates principles that seem precisely to exclude this: for instance, that "utilizations and contributions . . . are [equally] socially recognized."

If utilizations and contributions are equally recognized, then this suggests that no matter whether I make the bed for others or lie down in a bed that was made by others, I have in both cases rendered service to others and to society. No distinction should be made anymore between doing something for others and having others provide for you: none, in any case, that could reward the former and sanction or attach costs to the latter (not even when it occurs to such an extent that not enough is left over for others).

So, if it is not social structures that could steer behavior in the socially desirable direction, what is it then? One possible, partial answer is the reference to the variety of human interests and desires to act, which in Stefan's contribution is called the *Stigmergic Law*: "Given enough people and commons, a person or commons will be found for every task that has to be done."

But this *Stigmergic Law* is in no way a law (of nature) that has been proven. It is a mere postulate. It would be more justified to formulate it as a hope: If there are numerous different tasks and numerous different people, for every task hopefully enough people can be found that have enough interest in this task to take care of it to the extent required. Or maybe, instead of "that have enough interest in," we should say rather: "that may have no interest in the task, but take it on anyway, due to their insight into what is socially necessary"?

It is not clear from the original *Stigmergic Law* which formulation is intended, but this makes a huge difference with regard to the underlying concept of human being. If it is a matter of interest in doing something, then what underlies this is the conception of a humanity that disposes, as a whole, over a gigantic potential for different interests and desires to act: more than enough so that for all tasks—even for those that from an individual perspective seem most boring or thankless—a sufficient number of people

are available that find them highly interesting and motivating. This is a beautiful vision, which is surely not entirely implausible, since the multiplicity of human interests is in fact immense. But, nonetheless, how can it be established that this multiplicity is enough not just for many, but in fact for *all* necessary tasks?

If, on the other hand, it is a matter of insight into what is necessary, then this raises further questions in turn. Whence do all these people come that are so responsible that they make the affairs of the whole society their own and devote themselves to the necessary, but from their perspective not especially rewarding, activities that would otherwise remain undone? In order to "produce" a sufficiently large number of such responsible people, would not social indoctrination or, in other words, a program of re-education be required? Emancipatory projects, for good reason, recoil from such an idea. And would it not be rather unfair for some to toil away, in order to take care of what is socially necessary, while others only do what they want to do?

(5) Beyond Exchange, Extortion, and Sanctions

Stefan Meretz

When we reflect on qualitatively different forms of socialization, we have to free ourselves from the deeply ingrained imperatives of commodity society. These include exchange, extortion and the application of sanctions. In the case of exchange as a form of reciprocal extortion—you only get if you give—we are in agreement that it cannot provide the foundation for human interrelationships. But now, Christian, I understand you to be saying that, nonetheless—even though it appears to follow—you would not fundamentally leave behind extortion and sanctions, even if you have a nicer name for it.

In pre-modern times, extortion and applying sanction were in the hands of powerful rulers, whereas in capitalism they are based more on the omnipresent compulsion to valorize, although they can also appear in personal form. Due to the entirely understandable concern that, in the end, all necessary tasks would not be voluntarily performed after all, you would like to retain a structural, depersonalized form of domination of this sort (in however soft a form). Thus, you would like to "sanction or attach costs" to excessively "having others provide for you" (to a degree that is harmful to others). This is an argument that, for good reason, is well known to us from contemporary neo-liberal discourse: Extorting good behavior and sanctioning are elementary components of commodity production—as is, for instance, explained to us on a daily basis in the context of the German

"Hartz 4" welfare benefit regime. Thus, it is no accident that you take my postulated supersession of the separation between contributions and utilizations as the starting point for the debate. It is certainly the case that one can distinguish between contributions and utilizations (although a blurring of the boundaries already occurs under our current conditions, as the phenomenon of "prosumption" shows). But it is only commodity production that first made this into a separation and opposition whose poles obey different action rationalities, which from now on always appear as linked: Without a contribution, no use; without money, no commodity for satisfying a need. But this means that, vice-versa, a supersession of linked negative reciprocity (which is the social form of exchange) necessarily involves no longer distinguishing between contributions which count as such and "merely" useful contributions. Also because it is, from my perspective, unjustifiable (even just partially) to exclude those people who *are able* to contribute little or nothing from the *full* use of total social wealth. But who could reliably distinguish between not being able and not wanting to do so? My conclusion is that we must fully take leave of sanctions and extortion.

To this end, is it necessary to make assumptions about human nature? No. You only have to leave behind ingrained assumptions about human nature and to start from the possibility, in principle, for people to adopt a different form of social organization. From my point of view, the paradigm shift that has to be accomplished can be described as follows: The question is not how do I get people to do this or that—I call this a "really-existing socialist" style of thinking, which has not freed itself from the extortionist logic of the commodity form—but rather under what conditions do people, for good reasons, act and organize themselves in such a way that no one loses out. Just as under the old regime, it is subjectively functional (i.e. "is rewarded") to exchange, extort and punish, under the new regime—this is something that is being called for—it is functional to act inclusively. I provide an experimental description of how this can occur on the categorial level in my contribution to this book. Stigmergy plays a key role in the mediation here. But *mediation* implies that there can be no steering of the process in accordance with external standards (like in the case of the commodity, whereby the ability to valorize serves as external standard), but rather stigmergy is a means for self-organization and self-planning. To demand of me that I justify how self-organization can ultimately accomplish "*all* necessary tasks" is internally contradictory. At best, I can provide support for the plausible assumption that people who obey their own needs in a structure of an inclusionary-logical sort will do this—precisely because they experience the need to do so. (See my chapter.)

From my point of view, it is theoretically unjustifiable to want a post-monetary society, which can only be a free society, and simultaneously to

retain a little bit of structural extortion and sanctions. How people act, then, on the interpersonal level—whether they do, after all, try to employ sanctions, etc.—is irrelevant for the social relations of mediation, so long as such individual behavior does not become socially functional. Where there is basic structural freedom from domination *and* an unconditionally secured existence, it is always individually possible to avoid traditional "measures." In his theory of free cooperation, Christoph Spehr (2003) has developed the essential possibility of being able to leave a cooperation. This does not resolve all problems, nor does it do away with all conflicts (for instance, an unequal perception of fairness), but it provides, finally, a foundation for dealing with problems and conflicts without extortion and sanctions. And I am sure that under such domination-free conditions, creative energy will indeed flow into doing just this.

(6) Beyond Our Worldviews

Friederike Habermann

Is not our discussion characterized by the construction of oppositions? This only goes to show how much we ourselves are part of this society, but within it, in turn, also of our own respective contexts. One of us writes something and then the other responds: "If you do not want this, then you must want the opposite—and that is wrong!" This seems to me to be an expression of the fact that we move in relatively similar, but often still different discussion circles, which accounts for different views, but also brings with it differing associations with different concepts and thus gives rise to unnecessary oppositions. This does not foster communication.

Stefan, concerning Gabor Maté's statement ("We have a human need for companionship and for close contact, to be loved, to be attached to, to be accepted, to be seen, to be received for who we are"), you write: "The usual dichotomization appears in the postulated 'need for companionship': I have a need for something that I am not. And if I add the alleged need for 'close contact,' matters become even more difficult: Why should it be so?" In keeping with this, you accuse Maté or, respectively, me of making a simple reversal: "The quote from Maté gives me the impression of a (simple) inversion of the current relations: instead of isolation, distance, hatred, exclusion, discrimination, denigration, now contact, proximity, love, inclusion, acceptance, embrace."

In contrast, what I read in the quote is that we humans are not alone. We are always dependent on one another—this is a key moment in the feminist

discussion (cf. Knecht et al. 2012). The basis of queer feminist theories is, in any case, always to see individuals as part of society. But this aspect was also frequently thematized in the eco-feminist debates of the 1980s and in the care discussion of recent years. We are not autonomous individuals, but rather we need one another: as babies, as children, in our erotic needs, in our demand for love, in old age, in sickness, to learn to speak and to think judiciously, to develop in connection with one another, but also in order to be materially well provided for. Some of this even requires close contact. But the fact that in the process of all these dependencies, which, at the same time, represent socialization mechanisms, individuals also emerge who would rather spend the day alone is another matter—for these people too need all of that. To say nothing of the fact that I am convinced that sociophobes do not think any less about people and their reactions. Doing so might not trigger positive feelings for them. But that is beside the point.

And you, Christian, seemingly citing verbatim, have me saying that "the more social 'qualities [should] receive the greatest recognition'" in a different society. In fact, I wrote, "it obviously makes a difference whether we live in a society in which the asocial qualities receive the greatest recognition (because they represent the absolute precondition for success) or we live in a society in which these conceptualizations would be recognized as false oppositions and overcome." Here again: If the asocial qualities do not receive the greatest recognition, then this must mean that the social ones receive it—and in which case, you continue, the alternative structures have also to be clearly described. Which, then, is the focus of your further discussion.

Not only are we, as people, part of our society, but so too are our categories of thought. This too is a commonplace in feminist writings. But it also is, for example, in the writing of the post-colonial theorist Edward Said (1995) on "orientalism": the division into pairs of opposites in (Western/patriarchal) thinking—of which one is always, then, somehow better. In reality, however, the one is only ever existent, because the other is constructed. With our present everyday understanding, we simply cannot say whether all activities would be voluntarily performed in a moneyless society in which the logic of exchange does not apply: because the opposite of voluntary is compulsion and this opposition could be dissolved. That it is a matter of the "rediscovery of the self-evident" (Praetorius, 2015), of the fact that people take action, because something has to be done, is what feminists in recent years have called for. Feeding a baby served as the archetype in the discussion and was invoked by, among others, Geneviève Vaughan: "The mother does not feed her child in order to be fed by her, or in order to make the child put her finger in the mother's mouth" (Vaughan 2000). This is to say, she does it not

according to a logic of exchange or for fun, and, as a rule, also not as a work burden, but rather, above all, as something that is self-evident—which does not exclude its being fun or burdensome.

There certainly could be many possible future societies in which people are not willing to undertake activities in such a way that everything is covered afterwards (whereby the possibilities of technization, of reorganization, so that the activity is fun, of job rotation, etc. have often been discussed, including by you, Christian; cf. Siefkes 2008). There is not just *one* future society, nor even just one future society without money, and this is not a question of technology or of the chosen form of mediation, but depends rather on how people will develop within the society. And, happily, we do not have to argue about it from the point of view of our everyday understanding or of our respective worldviews, since we cannot foresee this.

Instead, we have to make a start. Then we will see.

(7) Do Not Demonize Exchange

Christian Siefkes

Stefan, you are emotionalizing our debate by using ethically highly charged concepts like "extortion." Everyone knows that extortion is reprehensible. When one speaks, as you do, of "extortion and sanctions" always as a pair, this suggests that applying sanction is just as reprehensible—even that sanctions are hardly to be distinguished from extortion. And in the case of exchange, you say explicitly that you regard it as a "form of reciprocal extortion" and hence cannot accept it as "foundation for human interrelationships."

But at least as regards exchange, the picture is skewed, since extortion requires an active role: I threaten someone else with negative consequences, in case he or she fails to meet my demands. But I have to produce these negative consequences: by, say, divulging a secret or shooting a relative or a friend of the victim of the extortion. By contrast, in the case of an exchange that does not take place, both sides remain passive.

It seems to me that an ethically emotionalized fallacy is involved here: Since A (extortion) is evil, both B (sanctions) and C (exchange) are also evil, and hence a better society must forgo all three and be organized "beyond exchange, extortion and sanctions." Instead of this emotionalized argumentation, a pragmatic one seems to me more appropriate: Exchange is not bad per se and hence to be rejected, but rather forms of social organization beyond exchange are to be promoted when (and only when) they lead to better results for the people involved. This means that, vice-versa, where

exchange transactions work well for the participants, there is nothing to be said against them.

This is why for me the question concerning "How will it work then?" is so important, whereas both of you tend to dismiss it with a "we will find out." For me, it is by no means sure whether a society in which neither people nor nature lose out must or even could entirely do without exchange. This has rather to be made plausible, and the problem is not resolved simply be saying "creative energy will, then, flow into doing so" (Stefan) or "then we will see" (Friederike).

And I become even more skeptical when you, Stefan, demand that "we must fully take leave of sanctions." If this only refers to applying sanction when someone does not contribute, then we can presumably still come to agreement. But your claim sounds more general: Every sort of sanction is to be rejected. You thus distance yourself from the findings of commons research, in which "graduated sanctions" figure as one of the essential conditions for successful commons: "Sanctions for rule violations start very low but become stronger if a user repeatedly violates a rule" (Ostrom 2009). Unnecessarily harsh sanctions are counter-productive—but it is not possible either to do entirely without.

The findings of commons theory also include the fact that commons always need rules: "No commons can function without rules that have been agreed upon" (Commons-Institut 2017). But rules without sanctions make no sense. The sanctions can, of course, be relatively harmless: say, a public admonition or disapproving looks. But a rule whose violation entails *no consequences whatsoever* can just as well be done without.

It is, of course, both conceivable and desirable that a future society could largely get by without sanctions, because all of its members find the rules so self-evident and clear that, in any case, no one violates them. But this can only be shown in practice, it cannot be theoretically postulated in advance.

Friederike, you refer to the feminist finding "that people take action, because something has to be done," using the example of the mother who feeds her child, precisely because the child needs to be fed. As true as this is, I do not find it very convincing when it comes to the organization of society as a whole. Society cannot be grasped on the model of a nuclear family. And even the example of the mother is not self-evident and hence universally human: In earlier times, rather than the mother, often a (paid) wet nurse was responsible for feeding children in well-to-do families. And why should specifically a woman have to do this task? Why should it be self-evident that the father or other men, who could just as well perform bottle-feeding, should be released from this responsibility? These sorts of one-sided role assignments are also criticized by feminists, and rightfully so.

This little example already makes clear that the seemingly self-evident is anything but self-evident. In this example, moreover, it is at least easily determinable what has to be done: The baby needs food (maybe it signals this stigmergically by crying) and then it is fed. The child does not have much say in the matter: It gets what other people think it needs.

Transferred to society as a whole, I see here a threatening parallel. Without money as general means of mediation, I am dependent on the decisions of others concerning what is needed: I do not decide as potential beneficiary, but rather the respective producers decide. Alternatively, I can try to make everything that I find necessary or desirable myself. But do-it-yourself is only possible within a very limited scope and sometimes not at all. With money (but without other means of domination), it is likewise not possible for me to force others to do what I would like to have done. But I can entice them: I can pay them, as long as I have enough money. Since I am sooner or later likely to run out, I have to decide what is most important to me—but this decision is mine.

Without money, on the other hand, there is little that I can do to influence potential producers. I can formulate wishes and leave signs, but I cannot exert any further influence on whether others take up these signs and wishes. (I can, of course, take action myself. But here we again run into the problem of do-it-yourself: It is only possible in a few cases and within a limited scope.) One of the key questions that I posed in my book *From Exchange to Contributions* was "How to coordinate the producer side … with the consumer side?" (Siefkes 2008: 17).

It is possible that findings deriving from the view of human nature, or concept of human being, could allay the fear that in a production-driven society (in which potential producers decide how and where to get involved as they see fit), the consumer perspective would be neglected (because consumers cannot do anything more than to provide indications of their needs and wishes and then to hope for the best). But my impression from the trialogue thus far is that you are just as lacking in findings of this sort as I am.

In the absence of such knowledge, my answer was to assume "weighted labor" as general currency, which one can earn and spend as one sees fit. This would be a sort of money, but one which cannot be accumulated by exploiting others and in the case of which, prices are established in the form of transparent social agreements, instead of "behind the backs of participants" in the general competitive struggle.

It seems to me now again that something would be lost if today's money would be completely thrown overboard instead of being replaced by some such "almost money": the possibility for people to organize their lives according to their own notions—not only as producers, but also as

consumers—would suffer. Nobody would like to stay a child for their whole lives, since today being a child also means that others decide what is good for you. The first allowance that children can spend as they see fit, instead of having to rely on adults as the "great fulfillers of wishes," is often already experienced as a sort of liberation—and rightly so. A future society should not fall back behind this condition.

(8) Comprehending Structurally, Instead of Merely Interpreting Interpersonally

Stefan Meretz

Christian, your clear reaction to my clear challenge is understandable. It makes hitherto hidden controversies visible. Let us take them one by one. I write of exchange, extortion and sanctions in *commodity society*. For me, these are *structural relations* and not ethical concepts, and I claim that we must free ourselves from them, both in thought and in practice. In exchange in commodity society, giving and taking are linked to each other and the relation is subject to the compulsion of equivalence. I perhaps need to mention that I am always considering the average situation and not the individual case that deviates from it. Contrary to what you claim, the consequences of an exchange failing to take place are not only negative, but, in generalized form, even pose an existential threat: for sellers, on the level of valorization and for buyers, on the level of sensory-vital satisfaction of need. Someone who does not sell anymore, goes broke; someone who cannot buy anything, starves—in the extreme case, which globally is not so infrequent. Pope Francis recognizes that the structural relations are the cause, when he notes that "capitalism kills."

When you say that "where exchange transactions work well for the participants, there is nothing to be said against them," you lose sight of structural compulsion, along with the reciprocal situation of extortion in which exchangers stand to one another. Exchange transactions very often work well for the participants, and I am glad too when, in making a purchase, I receive the commodity at the value that I have put on the counter as monetary equivalent. But such a purely interpersonal view obscures the structural conditions that first create the superficial appearance of good functioning: The producer has succeeded in producing the commodity at the market value and the buyer has succeeded in obtaining money, in order to be able to buy the commodity—and in both cases, structurally at the expense of, for the most part, invisible others (say, the Indian farmers who kill themselves

or the indigent who have to hold out their hands to get a meal). Although it appears interpersonal, the situation of extortion is thus, in fact, a structural situation of compulsion, which first makes the extortionist action functional and also necessary. The sellers cannot give away the commodity and the buyers cannot simply take the commodity either, even if it is available in abundance, since both sorts of behavior are structurally sanctioned (as bankruptcy or legal penalty). I do not find this structural view in your reflections. In your case, everything take place only at the level of persons.

Hence, it is logical that you expect the recipe for a free society on this interpersonal level. But I respond structurally and say that it is not possible to say in advance how people will concretely behave. You are looking for the answer where it is not to be found. But then, nonetheless, you come to the conclusion—by way of a kind of fallacy of immediacy—that from your perspective it is inexplicable why people should behave differently than they do today, for which reason one has ultimately to compel them to do so. My argument, on the other hand, is essentially that what matters is creating relations in which there are *good reasons* for people to behave differently: no longer at the expense of others, etc. From this average structural point of view, I cannot, in fact, guarantee that socially destructive behavior will not also occur. I merely try to show that under the conditions of an inclusionary logic, this behavior is dysfunctional and can then—indeed interpersonally—be managed as conflict, because everyone else has no reason to reward the dysfunctional behavior of individuals. I cannot say whether, under such conditions, interpersonal acts in which giving and taking are linked will still take place. This is also inconsequential, since such "post-exchange" acts, as I would like to call them, have *no structural functionality* any more. There is not anything that depends on them: neither for the individual nor for society.

The structure-neutral, interpersonal view is repeated in the discussion of the results of commons research. The necessity of sanctions that Ostrom generally noted for existing commons refers to relations in which it is altogether functional to exploit individual commons: for instance, to take material resources or products from them, contrary to the rules, in order to pocket an extra profit by selling them externally. This *must* be punished, in order to preserve the commons. But this is the case, because the social environment obeys a different logic, in which exploitation at the expense of others is rewarded (a.k.a. "logic of exclusion"). If there is no such "external" countervailing destructive logic, then the essential grounds for action threatening the commons are removed. And even if, under general social conditions of an inclusionary logical sort, a commons should fail, this does not threaten individual existence—in contrast to today. But, of course, not all reasons for destructive behavior will have been eliminated. No guarantee for

their elimination can be given, even if all structural conditions are maximally favorable. There will certainly be conflicts, for the simple reason that we are such different individuals and have different needs.

Even in the absence of structural sanctions, will there still, nonetheless, be sanctions on an interpersonal level? Must there be for a free society to function? Similarly as in the case of post-exchange, I would answer the question of *post-sanctions* as follows: Such sanctions may exist, but they no longer have any socially constitutive function. Unlike you, Christian, I do not think that rules have necessarily to be linked to sanctions, in order to be effective. I mean here generally applicable, hence abstract, sanctions that have—in a dual sense—an "indifferent" character. In stigmergic terms, rules are signals for desirable behavior—without its having to be said what generally occurs in the case of undesirable behavior. Of course, the people affected will deal with undesirable behavior. But this is part of the conflict resolution that, from my point of view, will acquire considerably greater significance as compared to today. Nowadays, many conflicts are simply "decided" by power in its various forms; they are precisely not worked out by way of the mediation of the different underlying needs. These are structural sanctions that you miss. From my point of view, concrete conflict resolution takes the place of abstract sanctions. Hence, I suggest that we conceptually distinguish between structurally anchored sanctions, which always have an abstract character, and concrete interpersonal conflict resolution.

Exchange, extortion and sanctions are to be abolished as structural relations and to be brought back as conflict resolution in the interpersonal domain. For every conflict is specific, and conflicts can only be resolved in their specificity when individuality is no longer subject to abstract sanctions regimes: so that there is the prospect of all being able to satisfy their needs.

(9) We Have to Make a Start—Then We Will See

Friederike Habermann

Thank you, Stefan, for your remarks on the difference between personal exchange and social exchange logic. To make this distinction clear, contemporary projects speak of being "exchange-logic-free." Another possibility consists of taking one's distance from "equivalent exchange," since what corresponds to the equivalence can only be socially determined and hence leads to the structural logics of exclusion to which you have alluded.

This brings us to the fundamental subject of this book. For what is at issue here are possible post-monetary societies: and hence too a society without a

logic of exchange, since every exchange relation based on equivalent value is money.

Christian, it is true that exploitation would no longer be possible in your system of weighted labor as money. That is why I have argued in my paper "Solidarität wär' eine prima Alternative" ("Solidarity Would Be a Great Alternative"; Habermann 2011) that it represents a kind of socialism before communism. But, ultimately, I fear that it preserves too much the logics of capitalism: the striving to have to do as little as possible to obtain resources—rather than conceiving sensibly taking action as an elementary human need. Of course, it will never be the case that all activities are popular. But once I bring also my favorite activities onto the market—and possibly have to learn that they are "of no value" in the competition with other activities—can I really, then, still take pleasure in contributing them? Or if, on the contrary, I see that my activities are treated as valuable, perhaps because others cannot replace them, will I not, then, start to hold back on them, instead of taking pleasure in my contributions?

You already called attention to one aspect, Stefan, but it is so important to me that I would like briefly to repeat it: Currently, thousands upon thousands are starving around the world, precisely because they have nothing to exchange. They can leave behind as many signs and wishes as they like, and they can continue hoping until the end. This goes under the "collateral damage of the system."

How would this be dealt with in your system, Christian? Everyone who can work does not have to starve and the social safety net takes care of the others? All of that preserves the logic of performance.

This brings us to the domain of care: hence of the "feeding, providing, caring, disposing, procuring, and attending" activities (Maler 2010).[2] Which of these are included at all in your answer ("to assume 'weighted labor' as general currency, which one can earn and spend as one sees fit")? Only those that I would gladly outsource, because I do not want to do them myself? But this leads to the care activities that I gladly do—because they are fun or because it is my own family members who need care—not paying. I still have to "look for work." And if I include them, how do I differentiate them from private life? They will inevitably be subject to a logic of competition. If it is the number of people washed that counts, then those caregivers will have the advantage who wash people effectively and rapidly. Thus, we would have the current situation, wherein there is no time available for needs that go beyond what would also be necessary when washing cars. And if it is only the number

[2] All of the terms in the original German quote from Maler—*Versorge*, *Vorsorge*, *Fürsorge*, etc.—contain the root *Sorge*: care.

of hours worked that counts, then whoever dawdles the most has the advantage.

And, indeed, here you are absolutely right: It does not have always to be the mother who takes care of the baby. Many of the considerations of feminist economics come from a time that was marked by difference-based feminism (see my contribution to this book). But do I have to reflect this fact in every quote? This is not the point of the passage. Even if I would argue that the crying of the baby is more than a stigmergic signal, the example could also have gone as follows: "When an oven signals that the rolls in the oven are ready, we would also turn it off when we are not paid for doing so and even when it is not at all clear that the rolls are for us." Apart from the family, which in capitalism is kept private as opposite pole, it is in fact difficult, however, to find examples that do not sound absurd. For, right away, someone would ask: Where is the, presumably paid, person who turned the oven on? Whose property are the rolls? Etc.

What, above all, comes into play, however, is that we have learned to be guided exclusively by money and self-interest outside the family—and hence the so-called gummy bear effect: namely, all those experiments that show that people cease to act helpfully or responsibly when money—or, in the case of children, gummy bears, for instance—comes into play. It is also for this reason that Ina Praetorius (2015) speaks of the "rediscovery of the self-evident."

People do not always think so much in terms of their self-interest. But when they do not, they are thinking *in opposition to* the social logic. And this is damned difficult, since we are always part of the social context. But it does happen. For example, there are fewer and fewer market-related economic reasons to cultivate organic foods. I use this example, because I wonder if you see capitalism—which in some parts of the USA, which are known as "food deserts," does not provide any more fresh food—as the outcome of free consumer choices? Now, you will respond: I am speaking of a system without a profit logic. But a profit logic will always develop out of a monetary system with an individual logic of maximization. And you will always be dependent on decisions. Even in an exchange-logic-free society, the latter will not always be to your liking, but they are still not determined by a logic of competition.

Everything that we are, we owe to other people. As the neurobiologist Gerald Hüther (2015: 145) has put it: "Nobody can develop his or her potential alone. Every human being needs the relation to others to do so." In contemporary society, however, everyone has learned to treat one another as objects, because what actually needs to take place between these people can no longer do so: namely, co-creation and co-evolution.

The *ABC des guten Lebens* ("ABC of Living Well") is a dictionary of terms for being able to comprehend the new that was brought out by nine feminists

in 2012. The authors undertake throughout to expose the dependency/freedom binary as a false opposition. Both only exist in relation to the other. Recognizing the fundamental dependence of all upon all, freedom means being able, accordingly, to bring one's own wish into the course of the world: "Freedom consists of making one's own uniqueness visible in the world in the first person" (Knecht et al. 2012: 59). This would be one possible form of self-evidence in a society without money.

Yes, Christian and also Stefan, empirically existing commons are often connected to sanctions. But Elinor Ostrom found that these seldom amount to more than a fraction of the monetary value that a violation of the rules would yield (cf. Ostrom 1990: 59). In other words, following the rules was economically irrational despite the sanctions. Nonetheless, they were hardly violated. So, what is the use of the sanctions? Just as Stefan argues for rules in general, they provide signals for desirable behavior. Or as I put it, they serve to demarcate a domain of self-evidence. Or in your words, Christian: "It is, of course, both conceivable and desirable that a future society could largely get by without sanctions, because all of its members find the rules so self-evident and clear that, in any case, no one violates them. But this can only be shown in practice, it cannot be theoretically postulated in advance."

This is precisely what I wrote: We have to make a start. Then we will see. Or borrowing from Eduardo Galeano's notion that utopia is always on the horizon: It is only once we have gone further that we can see further.

Because humans—and views of human nature—can never be independent of their society.

References

Bauer, Joachim (2006), *Prinzip Menschlichkeit: Warum wir von Natur aus kooperieren*, Munich: Heyne.

Butler, Judith (1990), *Gender Trouble: Feminism and the Subversion of Identity,* New York: Routledge.

Commons-Institut (2017), *Was sind Commons?* Available online: https://commons-institut.org/was-sind-commons (accessed August 30, 2017).

Habermann, Friederike (2011), "Solidarität wär' eine prima Alternative oder: Brot, Schoki und Freiheit für alle," RosaLuxemburg Stiftung Paper. Available online: http://www.rosalux.de/publication/37369/solidaritaet-waer-eine-prima-alternative.html (accessed August 30, 2017).

Hüther, Gerald (2015), *Etwas mehr Hirn, bitte: Eine Einladung zur Wiederentdeckung der Freude am eigenen Denken und der Lust am gemeinsamen Gestalten*, Göttingen: Vandenhoeck & Ruprecht.

Knecht, Ursula, Caroline Krüger, Dorothee Markert, Michaela Moser, Anne-

Claire Mulder, Ina Praetorius, Cornelia Roth, Antje Schrupp, and Andrea Trenkwalder-Egger (2012), *ABC des guten Lebens*, Rüsselsheim: Christel Göttert.

Maler, Gerda (2010), "Das Unsichtbare sichtbar machen," *ak—analyse & kritik: Zeitung für linke Debatte und Praxis*, 552.

Ostrom, Elinor (1990), *Governing the Commons: The Evolution of Institutions for Collective Action*, Cambridge: Cambridge University Press.

Ostrom, Elinor (2009), "Beyond Markets and States: Polycentric Governance of Complex Economic Systems," Nobel Prize Lecture, Stockholm. Available online: http://www.nobelprize.org/nobel_prizes/economic-sciences/laureates/2009/ostrom_lecture.pdf (accessed April 17, 2018).

Praetorius, Ina (2015), *Wirtschaft ist Care oder: Die Wiederentdeckung des Selbstverständlichen*, Berlin: Heinrich-Böll-Stiftung.

Rogall, Holger (2002), *Neue Umweltökonomie—Ökologische Ökonomie*, Opladen: Leske + Budrich.

Said, Edward W. (1995), *Orientalism: Western Conceptions of the Orient,* Harmondsworth: Penguin.

Siefkes, Christian (2008), *From Exchange to Contributions: Generalizing Peer Production into the Physical World*, Berlin: Edition C. Siefkes. Available online: http://peerconomy.org/text/peer-economy.pdf (accessed April 17, 2018).

Spehr, Christoph (2003), *Gleicher als andere: Eine Grundlegung der freien Kooperation*, Berlin: Dietz.

Vaughan, Genevieve (2000), "Gift Giving as the Female Principle vs. Patriarchal Capitalism." Available online: http://www.gift-economy.com/articlesAndEssays/principleVsPatriarchal.pdf (accessed April 17, 2018).

Part 5

Mediality After Money

5.1

Are We Approaching a Moneyless Society?

Peter Karl Fleissner

Ten years after the start of the first global economic crisis of the twenty-first century, the problems to which it gave rise have still not been overcome. New areas of crisis are constantly succeeding the old. The real estate crisis turned into a banking crisis and then a crisis of the economy as a whole. Most recently, it appeared in the form of a sovereign debt crisis, which threatened the very existence of the European Union. Some economists call for the taming of finance capital, such that real capital acquires greater influence; others are for the introduction of an unconditional basic income.

In this contribution, by contrast, we will not be searching for proposed cures to the sickness of capitalism, but rather we will be on the look-out for empirically-measurable tendencies that are driving the capitalist system to its end. The contribution is inspired by the "Fragment on Machines" from Karl Marx's *Grundrisse*, in which Marx anticipates the breakdown of "production based on exchange value" and hence of capitalism.

Relatively extensive theoretical, methodological and empirical preconditions are necessary for such a project. The theory employed here, the value theory of Karl Marx, is a part of his political economy. The input-output analysis of Nobel Prize winner Wassily Leontief was chosen as the methodological centerpiece. It has two advantages: On the one hand, it allows for a value-theoretical interpretation; and, on the other hand, there are quantitative-empirical descriptions of contemporary economies in the form of input-output tables, such as are, for instance, legally required by the European Union. The "computer socialism" of Cockshott and Cottrell (1993) also draws on detailed input-output tables. It is presented as an example for a subjective form of transcending capitalism.

Like in the natural sciences, Marx's epistemological approach distinguishes between the essence and the appearance of a phenomenon. The essence is obtained by way of abstraction, whereas the appearance is a composite, which can only be developed by moving from the abstract to the concrete. The abstract description of an economy allows us to tease out the distinction between commodities and services. Since, however, the latter do not create

any value, their expansion signifies a tendency to transcend value and, thereby, surplus-value, profit, and money.

1. Promises

More than two thousand years ago, Aristotle already described his dream of the end of slaveholder society:

> Tools may be animate as well as inanimate; for instance, a ship's captain uses a lifeless rudder, but a living man for watch … So any piece of property can be regarded as a tool enabling a man to live, and his property is an assemblage of such tools; a slave is a sort of living piece of property; and like any other servant is a tool in charge of other tools. For suppose that every tool we had could perform its task, either at our bidding or itself perceiving the need, and if—like the statues made by Daedalus or the tripods of Hephaestus, of which the poet says that "self-moved they enter the assembly of the gods"—shuttles in a loom could fly to and fro and a plucker play a lyre of their own accord, then master-craftsmen would have no need of servants nor masters of slaves.
>
> Aristotle, *Politics*, I, iv, 1253b[1]

Karl Marx took up this dream, concretized it and modernized it, and he thereby gave a new perspective to economics:

> But to the degree that large industry develops, the creation of real wealth comes to depend less on labor time and on the amount of labor employed than … on the general state of science and on the progress of technology, or the application of this science to production … With that, production based on exchange value breaks down … The measure of wealth is then not any longer, in any way, labor time, but rather disposable time.
>
> Marx 1973: 704ff.

This breakdown would signify the end of capitalism—at least of capitalism as we know it. All the elements and forms of appearance of exchange-value would be dissolved, if the creation of wealth is no longer based on wage-labor: surplus-value, surplus product, profit, commodity production, capitalist accumulation, exploitation, and alienation. Money would lose the functions it hitherto discharged as scarcity indicator and as the key to wealth.

[1] Sinclair/Saunders translation (Saunders 1981).

Thanks to this text,[2] economics was given a new purpose—though it largely failed to notice it. It was no longer supposed to deal, like the economic theories that hitherto existed, with the "optimal allocation of scarce resources," but rather with the question of the further development of capitalism and the transition to an economy that will come after it. Here is Marx on the subject: "It must be kept in mind that the new forces of production and relations of production do not develop out of nothing, nor drop from the sky, nor from the womb of the self-positing Idea; but from within and in antithesis to the existing development of production and the inherited, traditional relations of property" (Marx 1973: 278).

This process is characterized by contradictions that cannot be resolved within capitalism: "Capitalist production, therefore, only develops the techniques and the degree of combination of the social process of production by simultaneously undermining the original sources of all wealth—the soil and the worker" (Marx 1976: 638). But the social process of production remains largely in private hands. The wealth that has been created cannot be appropriated by the majority of the members of society, since the population that works for a wage lacks the necessary purchasing power.

The present author follows Marx's indication concerning the breakdown of production based on exchange-value in two respects: On the one hand, technology or the application of science in production is considered in its concrete forms; on the other hand, the creation of value, surplus-value and surplus product within the framework of contemporary capitalist society is investigated in detail. It will be shown here that the extent of service production plays an essential role.

It is interesting to note that in his later writings, Marx never returned to the content of the fragment on machines, which foresees the transcending of value and an end of capitalism. In their political writings, Marx and Engels did not leave matters to an automatic mechanism, but rather were actively committed to the conquest of power by the expanding proletariat. Before going on to indicate the concrete steps underlying the politics of communist parties, they write in *The Communist Manifesto*: "The proletariat will use its political supremacy to wrest, by degree, all capital from the bourgeoisie, to centralise all instruments of production in the hands of the State, i.e. of the proletariat organised as the ruling class; and to increase the total productive forces as rapidly as possible" (Marx and Engels 1969: 26). On the author's view, these positions are not opposed to one another, but rather the latter is a necessary complement to the former: If they are not to remain in vain, the subjective

[2] The manuscript was written by Marx in 1858–1859, but was only first published in 1939.

efforts to overcome capitalism have to be supported by an objective tendency toward its formal end.

2. Motor Productive Forces

Technology is one of the key parameters for both qualitative and quantitative changes in production. Through it, society regulates its metabolic relationship with nature. Technology is a component of the "productive forces" of human beings, which can be defined, in general, as a "system of interaction between material-objective and human-subjective elements" (Klaus and Buhr 1972: 879). In the course of history, this system has undergone considerable changes. Although interrupted by wars and crises, there is a long-term tendency for human labor functions to be increasingly transferred to the means of labor. A historical trend toward human beings using nature more efficiently thereby becomes apparent in both qualitative and quantitative terms.

2.1 Industrial Revolution

Whereas human beings separated themselves from the animal world by production and the habitual use of tools and supplemented their natural endowments by using artifacts, after slave-holding society and feudalism, large-scale industry developed in Europe in the nineteenth century by way of the precursors of manufacturing. The mechanical machine was its technical core and the formation of wage-labor was its human core. The mechanization and technization of many economic domains (for instance, spinning, weaving, turning, drilling, and milling) were connected to large increases in labor productivity. The mechanical machine (as a labor or tool machine) and, later, a whole system of machines gradually replaced human labor functions (drive energy, transmission of energy to the tool, guiding the tool) by technical mechanisms and partly made the use of human labor power superfluous. The consequence under capitalist conditions was an army of unemployed people in the cities.

2.2 Scientific-Technical Revolution

In the twentieth century, the industrial revolution was succeeded by the scientific-technical revolution (Bernal 1957: 960), which began with groundbreaking scientific discoveries in the natural sciences. "Information processing machinery" (IPM) can be described as the development-leading machinery of the present day. Since the middle of the twentieth century, such machinery has gone through various stages of technical realization: from

relay circuits by way of electron tubes and semiconductors, from transistors to error-free integrated circuits.

IPM is characterized by three sub-functions that can assume human labor (sub-)functions: (1) the sensor, (2) an information processing apparatus and (3) the actuator or effector (Adler 1978: 41; Fleissner 1985: 162ff.). The ability of human sense organs to ascertain conditions and changes in matter are embodied in the sensor. Indeed, it can even "perceive" processes that would be too subtle for human organs or for which there is no natural organ at all: like, for example, electromagnetic waves. The apparatus for processing information picks up the signals of the sensor and reacts to them in pre-programmed fashion. It imitates human decision-making processes in more or less complex ways. The outcome of the decision, finally, steers the actuator, which is responsible for the external effect. Every laptop computer and every mobile phone is an expression of this technical innovation.

If you connect IPM to a mechanical machine, what you get is an automaton (Figure 6). Thanks to its programming, the IPM "observes" the functions of the mechanical machine; by way of the actuator, the production process can be influenced or optimized. Marx was nearly prophetic in foreseeing this development: "No longer does the worker insert a modified natural thing as

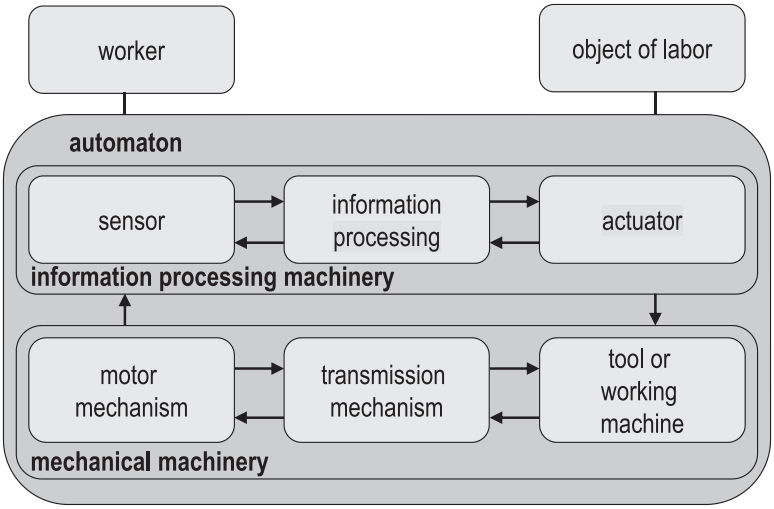

Figure 6 Block diagram of an automaton—tool machine and information processing machinery.

middle link between the object and himself; rather, he inserts the process of nature, transformed into an industrial process, as a means between himself and inorganic nature, mastering it. He steps to the side of the production process instead of being its chief actor" (Marx 1973: 705). Or in another passage:

> Once adopted into the production process of capital, the means of labor passes through different metamorphoses, whose culmination is the machine, or rather, an automatic system of machinery (system of machinery: the automatic one is merely its most complete, most adequate form, and alone transforms machinery into a system), set in motion by an automaton, a moving power that moves itself; this automaton consisting of numerous mechanical and intellectual organs, so that the workers themselves are cast merely as its conscious linkages.
>
> Marx 1973: 692

Whereas in handicraft activity and manufacture, the means of labor was in a direct relationship to the individual worker, in which the worker set the tone, the relationship is inverted by the machine system. In an automatic machine system, the worker becomes a mere appendage and accessory. The machinery confronts him as an alien power.

2.3 Industry 4.0

In recent decades, modern networking technologies via the internet and/or mobile communications have brought about a significant expansion of automation. The individual mechanical and/or information processing machines are becoming connected to global production or communication networks. In the European Union, the concept of *digitalization* (and in the German-speaking countries, the shorthand *Industry 4.0*) is used to speak about *cyber-physical systems* (CPS), by way of which industrial products are coupled with services all around the world. Electronic components ensure that the individual commodities not only contain information about their spatial and temporal coordinates, but also about their functional capabilities. Sometimes they are connected to their production facilities by way of the internet and, in the case of malfunction or the expiry of their useful lifespan, they can order their own replacements. The introduction of these cyber-physical systems will make possible further increases in productivity: not only in the production sector, but also in the service sector (e.g. care robots or the possible use of artificial intelligence in investment advising). They alter price structures, the business landscape and individual modes of behavior. As

the example of information and communication technologies shows us, technical innovations extend far into the leisure domain. The so-called social media, however, do not only allow for cheap information processes and communication processes for large parts of the population, they also facilitate their total surveillance.

2.4 Economic Contradictions

It would be a mistake to see the rapid dissemination of new technologies as a neutral process. It is deeply embedded in the economic mechanisms of capitalism: In order to maximize the profits of a business and to prevail over the competition, management tries to maximize sales and/or to minimize operating costs. One of the ways to do the latter is to employ technical innovations. New technologies are always used when the potential savings—above all, savings in wages and salaries—are greater than the investment costs for the new labor-saving machines. In this way, a new technology gets quickly disseminated in companies and, as a result, labor productivity increases.[3]

What result is to be expected? It is contradictory. On the one hand, the potential wealth of society could, in principle, be multiplied thanks to the development of science and technology. On the other hand, the time that people spend doing wage labor will decline. But this is not yet—as Marx hoped it would be—a blessing, but rather, in the form of unemployment, a curse. So long as wages and salaries remain tied to wage-labor, there will always be more and more people living in poverty. Then the product can no longer be sold, since the effective demand is lacking.

An additional contradiction has emerged with the mass appearance of information goods. From a technical point of view, information goods, expressed as bits and bytes, can be transferred practically for free via communication networks. Capitalism tries artificially to curb this glut, since no profits can be made with information that does not cost anything. It has thus ensured its artificial scarcity, by developing technical hurdles (copy protection) and legal obstacles (intellectual property rights). Information goods thereby become paid goods like other commodities, even though, unlike other commodities, they do not disappear after being consumed, but rather are preserved. By way of the detour of programs that are used in three-dimensional printers, this glut can also be extended to material goods (if

[3] In Germany, labor productivity per working hour increased by more than 3 percent annually from 1970 to 1991; following the expansion to include the former East Germany until 2016, by 2.2 percent (Statistisches Bundesamt 2017: Table 2.14).

sooner or later the question of energy and resources has also to be posed): Using 3D-printers, it is already possible today to produce a car from plastic parts in a week.[4]

Both contradictions point in the same direction: The developed productive forces come into contradiction with the relations of production. Whereas science and technology would, in principle, be able to create a good life for all, in capitalism wealth remains reserved for just the few.

3. The End of Value?

Jeremy Rifkin (2014), one of the "most famous professional visionaries of our times" (Staun 2014), deals with the tendencies of increasing labor productivity and rapidly evolving automation. In his book *The Zero Marginal Cost Society*, he predicts that capitalism will be replaced by a new paradigm of the "collaborative commons." This vision has much in common with the Marxian prognosis of an end of value. For Rifkin, the "schizophrenic" logic of capitalism leads to it devouring itself. Due to technology and capitalist competition, prices are constantly falling, until no profit is possible anymore on their basis. In the end, the marginal costs—i.e. the costs to produce one additional unit—are near zero. It is interesting to note that Rifkin does not refer to a political movement that seals the end of capitalism, but instead principally pays tribute to a sort of technological determinism. The "zero marginal cost society" that Rifkin describes might, then, be further away than he himself believes. But he does describe one contradiction correctly: The desired outcome of saving labor, in order to increase profit, is purchased by a reduction of living labor. The labor-saving methods will prevail generally and, little by little, take over the whole economy, as a result of which profits will ultimately decline.

In light of these prognoses, it would be important to have some indications of how far away we are from the theoretical end of capitalism. Can indicators be found that empirically locate this end? In the spirit of the quote "there is nothing more practical than a good theory,"[5] empirical indicators are only given meaning by a theoretical explanation. Hence, the first step that the author will undertake here is marked by a presentation of the theory of

[4] The American company Local Motors manufactured the two-seat "Strati" buggy in a week. The core element is a chassis made from a fast-drying carbon-plastic mixture, which is applied layer upon layer by a giant 3D-printer (Staun 2014).

[5] The quote has been attributed to Immanuel Kant, Ludwig Boltzmann, Albert Einstein, and Kurt Lewin.

value:[6] not just verbally, however, but in the notation of matrices and vectors that make it possible to extend Marx's value theory and to undertake empirical testing of his theses using contemporary economic statistics.

3.1 Input-Output Analysis

We need at this point to make a short digression on input-output analysis, which, in its mathematized form, allows for a condensed expression of complex relationships. We will be drawing, above all, on the work of the 1973 Nobel Prize winner in economics, Wassily Leontief (1986). His input-output analysis can, to a large extent, be combined with Marxian reflections.

The mathematical representation of an economy, following Leontief, allows for the use of matrix equations. With their help, the Marxian simple and expanded reproduction schemes, as described in volume 2 of *Capital*, can be extended to as many economic sectors as one likes. Moreover, a computer can be used to help with the calculations, since effective programs for calculation with matrices and vectors are available.

At the same time, thus modified, input-output analysis provides a bridge to empirical testing of the Marxian theses on value theory in capitalist economies. In most of the countries on earth, namely, annual or even quarterly input-output tables are published, which describe their economies and which permit us also statistically to test the Marxian concepts using concrete data.

Input-output analysis shows the interdependencies of an economy on the level of economic sectors or industries and answers the questions: "What industry supplies goods to what industry in what quantity?" and "What goods are acquired in what quantity for producing the goods of an industry?"

Input-output analysis corresponds to the Marxian concepts of use-value and exchange-value. The duality of the commodity, which is already emphasized at the beginning of the first volume of *Capital,* is thematized in Leontief's input-output analysis as "primal" and "dual" problem.[7] The primal problem deals with use-values (measured in quantities or units of measurement or weight, e.g. per year), whereas the dual problem corresponds to Marx's preferred value analysis (measured in units of money).

The primal problem expresses the use of output quantities x as inputs Ax or as final demand y; in matrix notation:[8]

[6] The original, but not very mathematized presentation is found in volumes 1, 2, and 3 of *Capital* and the three volumes of *Theories of Surplus Value*.

[7] The schemes are simplifications of existing economies. They include neither foreign trade nor public sector activities.

[8] For the calculation rules with matrices and vectors, see, for instance, Schneider 2017.

$$Ax + y = x \tag{1}$$

Ax, *x* and *y* are vectors: hence (vertical) arrangements of *m* numbers. Here, *m* is the number of different goods in an economy. Using vectors and matrices in their two-dimensional form, relatively complex arithmetic operations—such as the addition, subtraction or multiplication of many numbers—can be written in a simple formula. Matrix A can serve as an example. Matrix A is a quadratic matrix, since it has *m* rows and *m* columns. To make this clearer, you can think of an arrangement of numbers on the fields of a chessboard. At the points of intersection between the (horizontal) rows and (vertical) columns, it contains the m^2 "technical coefficients," a_{ij}, of an economy. An element a_{ij} of the matrix A is located at the point of intersection of its *i*th row and *j*th column. It shows how many units of the good with the index *i* are need to produce one unit of the good with the index *j*.

The elements of matrix A allow us to compare economies of different countries or, for a given economy, to identify and evaluate quantitative changes over time. In the case of technological changes allowing for major savings in materials or energy, they will become smaller.

The dual problem considers unit price *p* as the sum of the unit costs of the inputs required for the production of one unit *pA* plus the value-created per unit, *q*; hence:

$$pA + q = p \tag{2}$$

pA, *p* and *q* are (horizontal) arrangements of *m* numbers. The elements of these vectors are expressed in currency units.

The sales that take place in an economy are the result of the element by element multiplication of unit price times quantity. Either one multiplies the elements of equation (1) by the respective unit prices or one multiplies the elements of equation (2) by the respective quantities. One thereby comes close to the content of the empirically-given input-output tables.

3.2 Commodities and Value

Like Adam Smith, Marx held that all commodities traded on the market possess two properties. On the one hand, they have a use-value, which makes them a useful object. When they can be sold on the market for money, on the other hand, they possess an exchange-value. Whereas use-value is hardly influenced by historical epochs, exchange-value is tied to market economies. What is behind exchange-value, in qualitative terms, is human labor and this human labor is measured in labor-time. In market economies, in addition to

particular commodities, money appears as the general commodity. Money can be exchanged against every particular commodity, since a unit of money always expresses a certain amount of labor-time.

If one carefully reads the first section of *Capital*, it becomes apparent that the concept of the commodity is principally tailored to reproducible physical products. Marx regards the value of a commodity as a social relation between human beings that is expressed on the surface as a quantitative relation between things: The value of the commodity "appears first of all as the quantitative relation, the proportion, in which use-values of one kind exchange for use-values of another kind. This relation changes constantly with time and place" (Marx 1976: 126). By way of abstraction, Marx shows that the magnitude of value of a commodity is determined, more precisely, by the "the amount of labor socially necessary, or the labor time socially necessary for its production" (Marx 1976: 129).

Stripped of its market-mediated shell, the existence of commodities signifies that human beings work for one another, inasmuch as they produce goods that they exchange as needed via the mediation of money. Thereby, the concrete interrelation and interdependence of human beings—or, in other words, their sociality—gets expressed in a specific, viz. reified, form. Or, to cite Galiani per Marx, "Value is a relation between persons," to which Marx adds: "a relation concealed beneath a material shell" (Marx 1976: 167, footnote).

3.3 Abstract Representation of an Economy: Value Creation

In the first volume of *Capital*, Marx describes an abstract economy consisting of small commodity producers who compete with one another by way of markets. He investigates how the (exchange-)values of commodities come into being. These correspond to the direct and indirect amount of average socially necessary labor required for the production of a good. A value is thus composed of two components: of living labor and of the labor that is objectified in the inputs and that is transferred to the commodity. On this abstract level of presentation, Marx focuses on the essence of a market economy: on the production of commodities and hence of value through labor.

Physics, whose laws are initially also formulated on an abstract level, chooses the same scientific procedure. Thus, for example, the Newtonian law says: "All bodies fall at the same speed"—a claim that is constantly being empirically contradicted. A feather and a metal ball obviously do not fall at the same speed. It is only additional theories based on a more concrete view of things, like fluid mechanics, that allow us to explain the difference in the speed at which objects fall. It is similar in the case of value theory. Only the

introduction of additional mechanisms makes possible a better understanding of the observable price structure on the surface of appearances: for instance, in competitive capitalism.

Input-output analysis allows us also mathematically to grasp the creation of value and later value modifications in individual stages of concretization. We can thus take the scientific path that Marx proposed of moving from the abstract to the concrete.

After having presented the basic features of input-output analysis in a first step, we can now interpret such analysis in the spirit of Marxian value theory. The point of departure here is equation (2), Leontief's dual problem, which defines unit prices. If instead of the value created per unit, *q*, the living labor per unit, *n*, is used in the formula, the unit values, *w*, of commodities from the equation

$$wA + n = w \tag{3}$$

can be determined as

$$w = n\,(E\text{-}A)^{-1} \tag{4}$$

n symbolizes the row vector of living labor-time per unit; *A*, as above, is the matrix of technical coefficients. *E* stands for the unit matrix, which only contains ones in the main diagonal and, otherwise, nothing but zeros, and $(E\text{-}A)^{-1}$ stands for the Leontief inverse, which any laptop computer can calculate.

The result *w* contains all the average labor-times expended in the production of a good: often described as "labor-values." As can be seen in equation (3), the labor-values are composed of the labor-time contained in the inputs (already performed labor or, in Marxian terminology, constant capital *c*) and the newly added living labor.

Equations (3) and (4) describe the creation of values in an economy. These values will in general deviate from the prices that are empirically present. In capitalism, the newly added living labor is the point of departure for the division into a wage share and a profit share (in Marxian terminology, variable capital *v* and surplus value *s*). Marx thus obtained the famous value composition equation:

$$\text{value} = c + v + s \tag{5}$$

Technological changes are reflected in this model in two ways: On the one hand, living labor will fall in an industry in which labor-saving machines are

being used; on the other hand, material-saving and energy-saving changes will get expressed in smaller a_{ij} coefficients. As can be mathematically demonstrated, in both cases, the labor-values will become smaller. We thus obtain a conclusion that has importance for the further discussion: Labor-values per unit decrease with the use of labor-saving, material-saving and energy-saving changes.

Up to this point, Marxist political economists will largely agree with the above summary of the Marxian theory. The same cannot always be said for the following section.

4. Commodities and Services

While analyzing the activities of an economy more precisely, Marx asked himself the following rhetorical question:

> Are there not at every moment of time in the market, alongside wheat and meat, etc., also prostitutes, lawyers, sermons, concerts, theatres, soldiers, politicians, etc.? These lads or wenches do not get the corn and other necessaries or pleasures for nothing. In return they give or pester us with their services, which as such services have a use-value and because of their production costs also an exchange-value. Reckoned as consumable articles, there is at every moment of time, alongside the consumable articles existing in the form of goods, a quantity of consumable articles in the form of services.
>
> Marx 1963: 168

What role do these services play in the theory of value? In recent decades, it has become ever more important to answer this question, since services (both personal and economic services) already represent two-thirds to three-quarters of gross domestic product in the EU. Our current society is hence described by some as a "service society."

4.1 Characteristics of Services

Drawing on the above Marx quote, the author has formulated the following characteristics of services in the calculation of value. These observations are only valid on the abstract level of the creation of value:

1. Although, as a rule, services possess no material form, they have a use-value. Like commodities, they create a (whether real or merely imagined) usefulness for buyers.

2. As such, a service can neither be re-sold nor stored or accumulated, since it is consumed (e.g. the hearing of a concert or a transport service provided by a taxi).
3. A service makes no *direct* contribution either to the economic surplus product or to surplus-value.
4. Due to their production costs, services possess an exchange-value on the abstract level of value creation.

Like in commodity production, the production costs are composed of the depreciation of constant capital and of circulating capital and variable capital. In the case of services, however, a surplus-value as a component of living labor does not exist, nor does a surplus product. Profits are not present on this abstract level and there is likewise no investment in the service industries.

4.2 Exchange of Equivalents

The above-mentioned assumptions ensure that exchange of equivalents is present: i.e. that on the abstract level, a commodity can be "fairly" exchanged for another commodity (without one of the partners in the exchange taking advantage of the other). This is always the case when the amount of socially necessary labor-time required for two bundles of goods is equal. If this was not possible on the basis of the assumptions, a contradiction would be present. The first chapters of *Capital* examine the capitalist economy on the following presupposition: "The value of a commodity is related to the value of any other commodity as the labor-time necessary for the production of the one is related to the labor-time necessary for the production of the other" (Marx 1976: 130).

In this way, it is ensured that commodity-producing businesses can get back the full value of their products on the market; and service-providing businesses, the costs for reproduction. On this abstract level, there is no exploitation for service providers.

4.3 Value Modifications

In the third volume of *Capital*, Marx shows, among other things, that the exchange of equivalents, which for small commodity producers still had its justification on the abstract level, no longer applies with the transition to capitalism. The hunt for maximum profit rates leads to the shifting of constant capital into those branches that promise higher profits than one's own industry. The values of commodities now no longer follow the amount of labor-time expended, but rather are transformed into prices of production,

which, in ideal-typical terms, are determined (also, of course, for services) by the application of the average rate of profit to the cost price (Marx 1981: 264ff.). Under the heading of the "transformation problem," this step of concretization has been debated for over a hundred years.

In my view, the transition from value to prices of production that Marx discusses is only the first, if indeed also the most important, modification of value in capitalism. Other value modifications come into play when taking into account finance capital (by way of credit and interest), the state (by way of taxes, subsidies, and social benefits), and, finally, in contemporary information society, by way of the commodification of information goods and the commercialization of information services (Figure 7). The precise analysis of these historical value modifications must be reserved for further research.

Here, we want only to note that values and their modifications can be expressed in the Leontief model and approximately determined using empirical data. In this connection, the question arises of what variables actually bring about the different value modifications in the Leontief model.

In a closed economy with several sectors, but without foreign trade and without money, an easy answer can be given: It depends on how the surplus product is distributed among the different economic branches. If the economy is to remain in equilibrium (such that all markets can be cleared), the

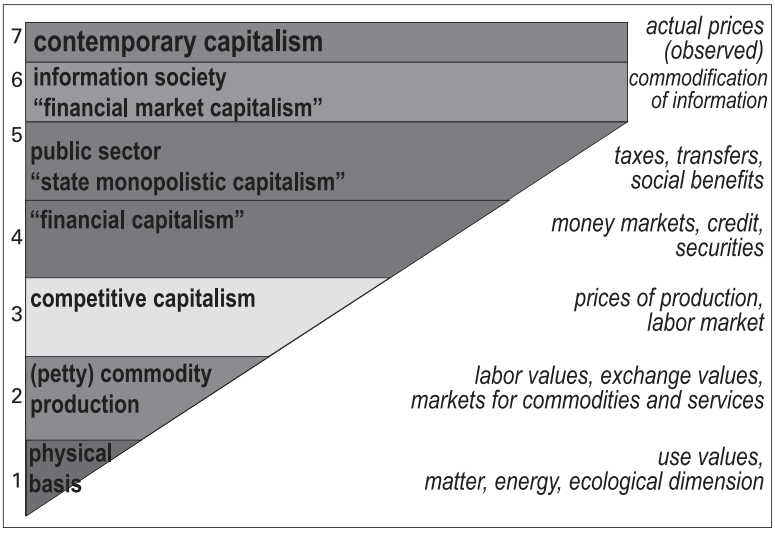

Figure 7 The economy—an evolving social construct.

respective unit prices will have to change. With constant technical conditions (the same technical coefficients and the same productivity of labor) and the same consumption by wage-earners, all possible value modifications (and hence too the prices proportional to the value modifications) can be generated by way of different allocations of the surplus product. By way of such an allocation of surplus product and hence of surplus-value to those branches that do not produce any surplus product, service industries formally obtain their profits, which they need for investment.

4.4 Productive/Unproductive and Value-Producing/ Value-Consuming Labor

Under the heading of "productive and unproductive labor," the question of services was already considered by Adam Smith and Karl Marx. For Marx, who was looking to discover the laws of motion of capitalism, two different definitions of productive labor are conflated in Smith. He only treats the first one as correct: "Only labor which produces capital is productive labor" (Marx 1963: 156). The only labor that is productive is labor that produces a profit for the entrepreneur who uses it. This definition—according to Marx—can completely disregard the content of labor. It does not matter if a business produces commodities or services, so long as a profit is obtained.

The second definition of productive labor that Marx finds in Smith is "labor which in general 'produces a value'" (Marx 1963: 156). What is at issue here is another property of labor: namely, that it is *value-creating*. Hence, in the sense of Adam Smith's second definition, such labor is unproductive as it creates no value and thus also no surplus-value and thus also no surplus product. One could call such labor "value-consuming." This second definition applies to services in the sense used in the present contribution.

5. The Surplus Matrix

In order for the theoretical considerations developed thus far to be connected to reality, reference has to be made to empirical-statistical data. It is only thus that the theory can prove itself. Fortunately, a special matrix is available in the input-output statistics: the so-called investment matrix or surplus matrix. It shows which sectors produce how many investment goods and to which sectors they are supplied. Figure 8 provides a schematic representation of a surplus matrix, whereby the sectors are divided into two groups: commodity-producing sectors and service industries. The rows correspond to an industry's sales of investment goods; the investments made by an industry

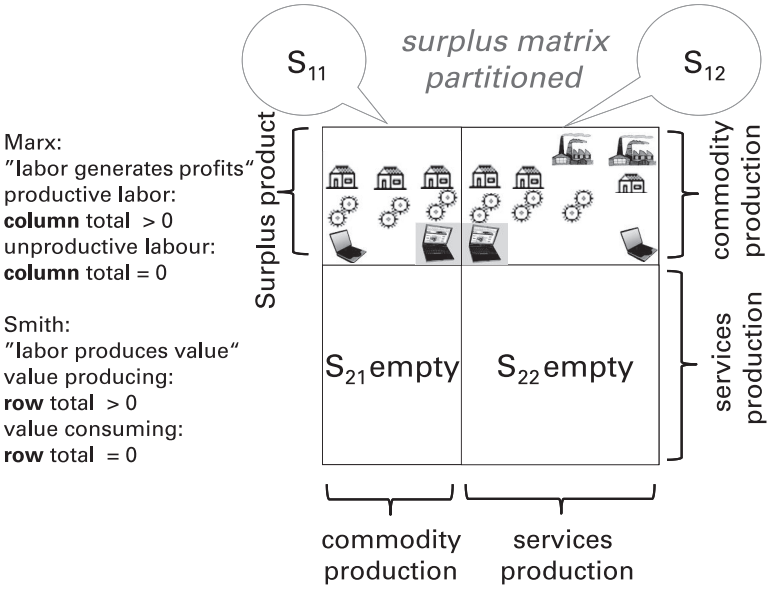

Figure 8 Surplus matrix.

are shown in the columns. On the assumption of an economy that is in equilibrium, they can be viewed as an approximation of the profits required by the industry for its financing. In equilibrium, such prices must get established so as to allow service industries to have profits that they can invest.

Using the content of the surplus matrix, we can provide criteria for also empirically demonstrating the different forms of productive/unproductive and value-creating/value-consuming labor. A business or an industry is productive in Marx's sense (i.e. the labor imparts value), if the corresponding column entry of the surplus matrix displays positive values: hence, a profit is being made. It is unproductive in Marx's sense, if the column entry is zero: hence, no profit is obtained. A business is value-creating, if the corresponding row entry is greater than zero, in which case a surplus product and, hence too, a surplus value is being produced. A business is value-consuming, if the corresponding row entry is zero. It is thus entirely possible to demonstrate both aspects of being productive independently of each other.

It should be noted that consumption goods and changes in stock are ignored in the surplus matrix. These can likewise be invested. It would also be possible to include this case and provide a matrix of the consumer goods or

changes in stock that are to be invested. This is not, however, supported by the current practice of national accounting.

Using the Austrian input-output statistics, we will provide an example of a surplus matrix: Of the forty-two service industries included among the altogether seventy-four sectors in the 2012 Austrian input-output table on CD-ROM, only nine sell investment goods at all. In the remaining thirty-three industries, the value of investment goods is zero.

In the following nine service industries, the national account shows investment goods (see Table 2). This appears to contradict the author's theses.

Table 1 List of service industries that do not sell any gross investment goods

Code	Sector
35	Electricity, gas, steam and air conditioning
36	Natural water; water treatment and supply services
37–39	Sewerage, waste management & remediation services
46	Wholesale trade, exc. of motor vehicles & motorcycles
47	Retail trade, exc. of motor vehicles & motorcycles
49	Land transport services and transport services via pipelines
50	Water transport services
51	Air transport services
52	Warehousing and support services for transportation
53	Postal and courier services
55–56	Accommodation; food and beverage serving services
60	Programming and broadcasting services
61	Telecommunications services
64	Financial services
65	Insurance, reinsurance and pension funding services
66	Services auxiliary to financial and insurance services
70	Serv. of head offices; management consulting services
73	Advertising and market research services
74–75	Other prof., scientific, technical serv.; veterinary services
77	Rental and leasing services
78	Employment services
79	Travel agency, tour operator and related services
84	Public administration, defence, social security services
85	Education services
86	Human health services
87–88	Residential care services, social work services
91	Library, archive, museum and other cultural services
92	Gambling and betting services
93	Sporting services, amusement and recreation services
94	Services furnished by membership organisations
95	Repair services of computers, personal and household goods
96	Other personal services
97	Services of households as employers of domestic personnel

Table 2 List of service industries that sell gross investment goods

Code	Sector
58	Publishing activities
59	Audiovisual services
62–63	Information technology serv., communication services
68	Real estate services
69	Legal and accounting services
71	Architectural and engineering services
72	Scientific research and development services
80–82	Other business support services
90	Creative, arts and entertainment services

The price total for these nine industries—58, 59, 62/63, 68, 69, 71, 72, 80/82 and 90—comes to 18.02 billion euros. This represents one-fourth of the price total for all investment goods of 71.92 billion euros (Statistics Austria 2012: cdtab21). In fact, however, around 15 billion euros of this total are "intangible assets" (namely, copyrights/ intellectual property rights, which can be marketed thanks to a monopoly position, and concessions and rights, for example, patents, licenses and operating figures, as well as organization-internal data), which have no material dimension (Statistics Austria 2012: cdtab29).

We have thereby obtained an empirical point of reference: namely, that service industries hardly make any contribution to surplus product. Conversely, this finding means the growth in an economy would come to a halt, if only services are being produced. For no more surplus product is produced that could be accumulated.

6. Possibilities for an End of Value/Money

6.1 When Is Value at Its End?

In light of the result of the previous section, it is tempting to ask more precisely when value, taking into account the theoretical and empirical foundations presented above, comes to its end. One precondition is that the service sector grows. This is true for the current Austrian data. Whereas the share of services in gross domestic product was at 68 percent in 2006, it had grown to 70.7 percent by 2016 (Statista 2017). If we do a linear extrapolation, the share of services would hypothetically reach the 100 percent mark around 2125. This would mean that no more surplus product, surplus-value or profit would be created. Money would lose the role that it hitherto played: Capitalism would have come to its end.

In Germany, the end of capitalism would occur later: With services representing a share of 61.9 percent in 1991 and 68.9 percent in 2016, doing a linear extrapolation, no more commodities would be produced in 2152 (Institut der deutschen Wirtschaft Köln 2017). In Germany, notably, the trend toward increased services has been somewhat diminishing since 2009.

It is clear that these findings have to be handled with extreme caution and only provide very rough indications. The concrete historical evolution could turn out to be very different.

6.2 Computer Socialism: Labor-Times as Regulators of Price

A sketch of an alternative future that, similarly to the Marxian value theory, is based on labor-time calculations, which normatively determine prices and wages, was published shortly after the collapse of really-existing socialism (Cockshott and Cottrell 1993). The preliminary studies for this book go back to the late 1980s, when the crisis of the Soviet Union under Gorbachev and of the member states of the Council for Mutual Economic Assistance was becoming evident. Cockshott und Cottrell attempted to give a timely answer to the question of how a post-soviet socialism could be politically and economically organized. They view radical democratization and efficient economic planning as the main pillars of their conception. These two components are supposed to avoid the errors both of capitalism, which is plagued by exploitation and growing inequality, and of soviet-style socialism. The latter, after all, met its end due to excessive bureaucracy, forced obedience, economic inefficiency, and the impossibility of reforms.

The authors proposed the creation of a gigantic input-output table, including around a million different goods and showing their inter-industry interdependencies and the labor-times necessary for their production. They argue that a bigger computer (built in 2000), in conjunction with a better algorithm, would have certainly been able to calculate the labor-content of commodities in a matter of seconds. All businesses could be equipped with personal computers and spreadsheet programs, which gather relevant data for them and forward this data via the Internet to a central computer. This would essentially solve equation (4). Conversely, they would be able to retrieve the labor-time data for the inputs required by their company from a web-based platform and to integrate this data in their calculations. In this way, the prices of goods could be established without a market being needed.

We should, however, also call attention to a difficulty in comparison to capitalist enterprises. Via the market, capitalist enterprises are in continuous competition and are under pressure to cut costs. To this end, they often use

new technology that saves labor, material and energy—and that perhaps also improves the quality of the product—in order to increase their own rate of profit. A constant pressure on other companies also to improve their production processes is thereby created and this explains why in capitalism new technologies rapidly spread. It was precisely this capacity for innovation that was lacking in really-existing socialism.

In computer socialism, the making redundant of labor-power through innovation would not represent a serious problem, since the resources to have a normal life are available to all members of society. But the capacity for innovation could suffer due to the lack of competition and this would get expressed, above all, in negative consequences for the country's balance of trade, both in goods and service.

Cockshott and Cottrell attach great value to a comprehensive and efficient planning system. The highest level of strategic planning is concerned with the consolidation of infrastructure, with education, research and innovation, environmental aspects, investment planning and time structure, the allocation of goods and services, and with the planning of agricultural production. The means of production are directly distributed according to the plan; for some consumer goods, there is a market, on which payment is made with labor vouchers. Income level is regulated by a relatively complex system of job evaluation. This is supposed to counteract the leveling tendency that was present in really-existing socialism and to allow individual performance potentials to be better used.

The detailed planning is supposed to be organized in accordance with the feedback principle, as is also to be found in Figure 6. The monitoring authority determines whether supply exhibits deviations from demand and then alters prices, such that deviations from the labor-time expenditure required to produce a good can absolutely occur (Cockshott and Cottrell 1993: 126).

Only fundamental decisions (e.g. the level of taxation, determination of the share of national income to be devoted to investment, health and education) are to be made by way of a referendum. Planning economists make suggestions on other domains, upon which a democratically selected planning committee decides.

Heinz Dieterich (2006), a professor of German descent who teaches at the Universidad Autónoma Metropolitana in Mexico City, has taken up Cockshott's and Cottrell's suggestions and supplemented them by concepts of grassroots democracy in his book *Der Sozialismus des 21. Jahrhunderts* (The Socialism of the Twenty-first Century). Although according to the magazine *Der Spiegel*, he is considered to be the "chief ideologist of President Chavez" (Dieterich 2006: cover blurb), Dieterich was not able to convince Chavez to adopt his conception of socialism.

This revealed a weakness from which many conceptions of a post-monetary society suffer. Although, as a rule, the future societies are depicted in all their details and in their inner workings, a realistic theory of the transition to them is lacking.

6.3 Concluding Remarks

"Commonistic" initiatives are conceivable and, in part, already visible. Elinor Ostrom, who in 2009 was awarded the Nobel Prize for Economics for her work, has shown that "commons" can absolutely have their own *raison d'être* and are not merely short-lived institutions that self-destruct through overuse. Thanks to the efforts of, among others, Christian Siefkes and Stefan Meretz, "commomism" has become a new vision of an alternative social system, which exhibits both similarities and differences with respect to capitalism and really-existing socialism.

There is no shortage of other ideas. For instance, the German author and playwright Fabian Scheidler published a book titled "The End of the Mega-Machine: The Story of a Failing Civilization," in which he convincingly describes not only the self-destructive mechanisms of the capitalist universe, but also examples of alternative action that leads beyond it (Scheidler 2015: 205–225). A short time later, the British journalist Paul Mason again took up Marx's reflections in the *Grundrisse* and depicted transitions to a society beyond capital (Mason 2016: 337–371). Under the heading of "unconditional basic income," various groups have recently made proposals that aim to put formal labor and income on a new basis—which is a necessity given the announced use of new labor-saving technologies. It is possible, in part, to do without the use of money here, inasmuch as the required goods and services are offered to people directly and free-of-charge (Popper-Lynkeus 1912).

References

Adler, F. (1978), *Zu einigen Grundmerkmalen der wissenschaftlich-technischen Revolution*, Vienna: Arbeitskreis wissenschaftlich-technische Intelligenz.

Bernal, J. D. (1957), *Science in History*, London: Watts.

Cockshott, W. P., and A. Cottrell (1993), *Towards a New Socialism*, Nottingham: Spokesman.

Dieterich, H. (2006), *Der Sozialismus des 21. Jahrhunderts—Wirtschaft, Gesellschaft und Demokratie nach dem globalen Kapitalismus*, Berlin: Kai Homilius.

Fleissner, P. (1985), "Zum Umbruch des Produktivkraftsystems," in *Marxistische Studien, Jahrbuch des IMSF 9*, 160–75, Frankfurt am Main: Institut für Marxistische Studien und Forschungen.

Institut der deutschen Wirtschaft Köln (2017), *Bruttowertschöpfung nach Wirtschaftsbereichen, Deutschland 1991–2016*. Available online: http://www.deutschlandinzahlen.de/tab/deutschland/volkswirtschaft/entstehung/bruttowertschoepfung-nach-wirtschaftsbereichen (accessed June 2, 2017).

Klaus, G., and M. Buhr (1972), *Philosophisches Wörterbuch*, Band 2, Leipzig: VEB Bibliographisches Institut.

Leontief, W. (1986), *Input-Output Economics*, 2nd edition, New York/Oxford: Oxford University Press.

Marx, K. (1963), *Theories of Surplus Value*, part 1, trans. Emile Burns, Moscow: Progress Publishers.

Marx, K. (1973), *Grundrisse: Foundations of the Critique of Political Economy*, trans. Martin Nicolaus, London: Penguin/New Left Books.

Marx, K. (1976), *Capital: A Critique of Political Economy*, vol. 1, trans. Ben Fowkes, London: Penguin/New Left Books.

Marx, K. (1981), *Capital: A Critique of Political Economy*, vol. 3, trans. David Fernbach, London: Penguin/New Left Books.

Marx, K., and F. Engels (1969), *Manifesto of the Communist Party*, Marx/Engels Selected Works, Vol. 1, Moscow: Progress Publishers. Available online: https://www.marxists.org/archive/marx/works/download/pdf/Manifesto.pdf (accessed February 7, 2018).

Mason, P. (2016), *Postkapitalismus—Grundrisse einer kommenden Ökonomie*, Berlin: Suhrkamp.

Popper-Lynkeus, J. (1912), *Die allgemeine Nährpflicht als Lösung der sozialen Frage, eingehend bearbeitet und statistisch durchgerechnet. Mit einem Nachweis der theoretischen und praktischen Wertlosigkeit der Wirtschaftslehre*, Dresden: Reissner.

Rifkin, J. (2014), *The Zero Marginal Cost Society: The Internet of Things, the Collaborative Commons, and the Eclipse of Capitalism*, New York: St. Martin's Press.

Saunders, T. J. (1981), *Aristotle, The Politics*, trans. T. A. Sinclair, revised by Trevor J. Saunders, London: Penguin.

Scheidler, F. (2015), *Das Ende der Megamaschine—Geschichte einer scheiternden Zivilisation*, Wien: Promedia.

Schneider, A. (2017), *Mathebibel*. Available online: http://www.mathebibel.de/matrizenrechnung-grundlagen (accessed January 7, 2017).

Statista (2017), *Anteile der Wirtschaftssektoren am Bruttoinlandsprodukt Österreichs*. Available online: https://de.statista.com/statistik/daten/studie/217604/umfrage/anteile-der-wirtschaftssektoren-am-bruttoinlandsprodukt-oesterreichs/ (accessed January 5, 2017).

Statistik Austria (2012), *Input Output Tafel 2008*, CDROM cdtab29, Wien: Statistik Austria.

Statistisches Bundesamt (2017), *Volkswirtschaftliche Gesamtrechnungen, Inlandsproduktberechnung, Lange Reihen ab 1970*, Table 2.14. Available online: https://www.destatis.de/DE/Publikationen/Thematisch/VolkswirtschaftlicheGesamtrechnungen/Inlandsprodukt/

InlandsproduktsberechnungLangeReihenPDF_2180150.pdf?blob=publicationFile (accessed July 2, 2017).

Staun, H. (2014), "Ökonom Jeremy Rifkin—Das Ende des Kapitalismus," *Frankfurter Allgemeine Zeitung*, 13 September. Available online: http://www.faz.net/aktuell/feuilleton/jeremy-rifkin-die-null-grenzkosten-gesellschaft-13151899.html (accessed January 2, 2017).

5.2

~~Money~~: For a Non-money Economy

Stefan Heidenreich

Preface

Money serves, among other purposes, to distribute goods and labor. In the future, we'll be able to accomplish these tasks in other ways—without money and, instead, with the aid of networks, algorithms, and artificial intelligence.

Why would we want to get rid of money? The medium of money has three functions: payment, valuation, and storage. In every economy based on money, storage tends to dominate over the other functions. This tendency is unavoidable, because it's inherent to money. The command "More!" is built into it from the very beginning. The drive inevitably leads to a situation in which every payment and all economic activities serve to pay tribute. The valuation of goods and services favors assets and their accumulation. Increasingly, income and property are distributed unequally. That should come as no surprise, since the measures taken by central banks following the crisis in 2008 only served to ensure that assets would always be protected.

The design for a non-money economy would be that of a fundamental utopia, and it would stand in opposition to an economy based on money. A non-money economy would do away with the possibility of storing values and assets; it would replace the functions of valuation and payment with a system that distributes things and activities using algorithms. This is already possible, technically speaking, because we keep digital records of every transaction, and we can crunch enough data to replace the market's information function. In this sense, the concept of a non-money economy represents a radical, leftist utopia: an economy that would strive toward equal distribution and that would do so by changing the current system in a fundamental way, based on money's role as a medium.

(…)

1. Distribution

The purpose of the economy is to distribute goods and labor. But money is not necessary in order to accomplish this. Historically, the medium of money made it possible to bundle economic information as well as communicate it. Today, almost the entire economy operates under the regime of money. But this doesn't mean we've reached the end of the story. Ever since data and computers have been big and fast enough, we've been able to imagine other techniques of distribution that don't use money and that are probably preferable. That is why we need to begin with the issues of distribution and allocation, rather than with markets and their adherence to money.

The task of distributing a large number of things among various participants is a common problem for network applications. It's about dealing with a large number of connections. The core component of these connections is a social relation, whether it's the result of a gift or help or communication. Every transaction, every act in which something is distributed, is equal to a "link."
(…)

The relationship between prices and information changes radically according to the density and the amount of the data involved. In a data-rich environment, prices only express retroactively what we already know about the behavior of consumers on the market. These days, when we book a flight, the prices are set using algorithms. The head start offered by data doesn't just apply to consumers; it applies to stock markets as well. The recent, sporadic, flash crashes reveal what happens when algorithms speculate on stocks and other securities. If our profiles, our likes and our consumer histories can be used to figure out who will buy what and where, the aggregate market becomes split up into a large number of personalized, instantaneous, momentary markets. The price no longer contains any additional information. On the surface, it seems as if distribution will still be represented by prices and calculated in terms of money. But in the underlying flows of data, we can already recognize the technological foundations of an economy that is no longer reliant on money.
(…)

2. Transactions

Transactions form the foundation of every economy. The simplest of all transactions is a gift. One person (A) gives something (x) to another

person (B)—noted mathematically as a tuple or finite ordered list (A, B, x). Here, the term "person" can refer to any active agent; not just human beings, but also robots, programs, machines or other living beings. A gift, too, can be anything that is given; not just commodities, but also information, events, access, actions, assistance and the like.

Rather than labor, the act of giving—the essential transaction—should serve as the basis for the economy. That's for the simple reason that it's possible to work without being part of the economy, for example by working entirely for one's own sake and without having an effect on others. In contrast, a transaction always creates a social relationship of some kind. As a result, division—not labor—is the primary act involved in the creation of an economy built on the division of labor. In any case, we need to take a closer look at what economic activity actually means. The notion of labor is intrinsic to money economies in the form of paid, productive activity. In the absence of money, the economic value of an activity is determined by whether and how it is shared.

Every format and structure both of giving and of exchange—payments, prices, values, buyers, consumption, supply, demand, and markets—can be traced back to simple acts of giving. All economic relationships can be understood according to this elementary transaction.

Though we think of buying something as an altogether basic act these days, it emerged quite late in the long history of economic relationships. The same goes for money. Previously, simple transactions predominated: gifts, for example, even forced ones in the form of taxes. The process of measuring and recording gifts in numerical form began, not with money, but with systems of inscription that were usually linked to temples. The various narratives suggesting that the economy began with exchange are not just historically inaccurate but refuse to acknowledge that there was an economy before the existence of money. For the same reason, those narratives are unable to conceive of an economy in the future without money.
(…)

3. Media and Networks

When, exactly, data will be able to take over the tasks of money depends on the relationship between computing power and transactions. Once computer networks are big and fast enough to process all payments made, it will be possible to emulate the function of money algorithmically. We now stand at the threshold; actually, chances are we've already crossed it.

Economic forms that don't rely on money are not entirely new. Before money came to occupy the position it does, larger economic entities were administered through systems of inscription. The remnants of those systems are found not only in the ruins of temples, but also in various religions' myths regarding guilt or debt. (The word for "guilt" and for "debt" is the same in German: *Schuld*.) In reciting the Lord's Prayer, one of the most famous of all, Christians the world over ask day in and day out, millions of times over: "Forgive us our sins, as we forgive those who sin against us." Unfortunately, they have forgotten the economic basis of these lines: The Hebrew word for "sin" also means "debt." And Luther's translation of that line, Matthew 6.12, reflected that: "Forgive us our debts, as we forgive our debtors." Today's version distorts the original meaning on behalf of a more market friendly version of Christianity. With the shift from a centralized system of inscription to a decentralized one, namely money, forgiving debts went out of fashion. This was no coincidence, as the numerous believers who had come to occupy a central position of power were more interested in collecting debts than in forgiving them. Christianity responded by replacing debt with sin and replacing the custom of forgiving debts with confession, which is to say through a form of control.

Historically speaking, economic relations did not begin with exchange, and they most certainly did not begin with payment. First, people gave, they helped, they lent. The concept of property did not exist. In small village communities, memory was all they needed to more or less keep track of who had given what to whom.

It was only after the invention of writing that larger economic entities could be organized over the long term. Records of gifts and debts can be found at the excavation sites of numerous ancient civilizations. Ultimately, the invention of writing can be traced back to such archives of gifts and fees. Together with the first general medium and the system of inscription, new economic entities and states began to evolve. The dominance of these economies of inscription, which were usually concentrated around temples and cities, could extend as far as their power to collect fees.

Money came later. In a strictly technical sense, money is not a medium, but a method. It uses various media to make notations mobile—as well as read-only, in effect. In terms of the economy, money represented a radical innovation, since it converted the simple transaction of the gift into a symmetrical exchange. When somebody paid to acquire something, nothing was left over. There was no longer a need to record anything. Money saves data.

The spread of money ran parallel to war and expansive political systems. With money's help, those systems could establish a cycle of taxes, payment and provisions that could sustain armies.

The circulation of goods and labor has led to a complex system comprising various forms of notation that are more or less like money. This has included everything from payments to promises of payment, from the coin to the promissory note, from paper money to digital currencies. In the end, we have returned to a system of inscription that not only records every payment, but which also constructs the wildest derivatives and wagers based on promises of payment. Still, once we are able to process an abundance of data, it will no longer matter that money helps us avoid data.

Peer-to-peer currencies and cryptocurrencies don't add anything fundamentally new to the system. Bitcoins are still a form of money, even if they circumvent a centralized institution. On the path toward the elimination of money, they simply represent a detour. After all, digital and peer-to-peer payment systems uphold the principle of payment. They merely replicate money as it has always existed within the new medium of a distributed network. This corresponds to the first step within a transformation in media.

Ever since Marshall McLuhan, it has been a commonplace within media theory to state that, initially, new media reproduce old content. Transformations in media often proceeed in two phases. First, new media imitate old media, and they conserve earlier rituals and practices. In the case of Bitcoin, it's the replication of money in the shape of networks. Only in the second phase will it become clear how new digital media might develop a solution all their own, a solution beyond money. This has yet to happen in the case of the economy. It will occur when intelligent networks assume money's economic function of distributing things and tasks.

The most valuable aspect of peer-to-peer currencies is the architecture they rely upon, the so-called blockchain. It represents the basis for a decentralized mode of administration within which transactions can be processed and validated anonymously. The method works just as well for money as it does for systems of notation that aren't based on money and that are decentralized. The blockchain therefore represents a possible building block for a non-money economy.

The second phase in this transformation will deal with how a non-money economy might emerge and how exactly it might do away with money. Given the way that technology develops, there are various possibilities. There is no fixed path with set, deterministic guidelines for media. Technological innovation opens up possibilities for future activities, in the sense of "affordances" as it relates to the ecology of information. These tend to come about through a chaotic process full of contradictions and unforeseeable deviations. The transformation is spurred on not by plans or impact assessments but—to the contrary—by the misuse of possibilities, the counterculture, hacking and the opportunities

opened up by mistakes and gaps. The same applies for an economy that's not based on money. We won't be able to plan it out. It will emerge in the niches and obscure corners of networks and spread out from there.
(…)

4. Matching

Matching is the most important process in a non-money economy. The process assumes functions that are otherwise controlled by prices and by the market. "To match" simply means to classify, to assign or to link.

Matching serves to connect any participants and any of their desires, needs, possibilities, abilities, and resources. It mediates between these factors, it can advise participants in their decisions, and it both follows along in any negotiations and takes note of the result.

Within theories concerning algorithms and networks, the term *matching* refers to every process of coupling elements, which are usually present in two different sets. For our purposes, these elements can consist of things or people or events or points in time or locations or objects of any kind. It is by no means impossible for elements of the same set to be matched with one another. That could include two people connected through a dating agency, a team of programmers working together to develop a project or the paths and loads of trucks or shipping containers.

In formal terms, matching performs a conditional gift in a network-based environment. The result of a matching procedure can be described as a transition between two states: before and after. That's because every matched transaction has some effects that go beyond the immediate participants—even if the effects are minor. The environment includes any and all links and information that go into the matching process, that are then processed, and that are reflected in the end result. All the decisions made along the way are accounted for, not just in terms of what's given and what's taken, but also in terms of the good itself and any impact made on the third party. Factors that go into making a match include similar transactions, the history of transactions in the participants' profiles and the participants' desires, needs and capacities.

Matching accounts for all of these parameters in order to suggest one or more possible solutions. It functions not as an auctioneer (in the Walrasian sense), but as a mediator. That is to say its goal is not to calculate the best solution and to leave things at that, but to mediate between a number of

interested parties. Matching is thus scalable, if needed. It's not always necessary to exhaust all the options. When it comes to things that we use on a daily basis, matching would be a formality and take less time than paying does now. However, were matching to be applied to a far-reaching political process, it would take into account the various committees, authorities and interested parties that take part in making such decisions. And it would scale to meet those proportions.

(…)

Matching makes suggestions along the way to a decision. It identifies opportunities. And it oversees the decision-making process. The algorithm might even point out something we want before we realize we want it. Some apps already make suggestions like this by evaluating our desires and then predicting them. Whether or not we want to be influenced in this way might be irrelevant; it is unlikely to change the course of technological innovation. The more advantages people come to expect from predictive machines, the more likely they will be to rely on them. In this way, socially recognized patterns of behavior emerge all on their own. No matter what time period we're talking about—the future, the present or the past—changes in media never come about due to need. Rather, every change is driven by technological dynamics unique to it, and every change creates its patterns of behavior retrospectively.

(…)

From the user's perspective, the matching process usually begins with a desire or a need. The algorithm then suggests various solutions. If one of them fits with underlying, *a priori* technical dynamics, a link is established with the other participants in the transaction—producers, suppliers, inventors, machines or algorithms. If an agreement is reached, the transaction is carried out and recorded. The process can be initiated by any of the four participants: the interested party, the one offering something, the product itself or even the algorithm.

We are already familiar with most of the steps in the matching process. We experience them all the time, for example when we search for something online or offer something of our own for sale.

The matching process involves a wide variety of functions having to do with a transaction. Whether we encounter these functions within a unified framework or whether they are split between a vast number of apps is irrelevant from the perspective of a non-money economy. The important thing is that matching no longer relies on money. Rather, it organizes distribution directly. That also means that transactions are recorded and stored, but they are not valued according to fixed prices or accounted for as such.

Matching in itself is nothing new. Even in an economy that operates with the use of money, it is constantly taking place. When we buy things, or somebody pays us for our labor, that's a matching process. It's just that this process follows different rules than it would in a world without money. In a world like that, the existence of a simple and one-dimensional value would no longer be a criterion for selection. Instead, a whole series of other decisive factors would come into play.

Consider for a moment how matching works under the conditions of money. Imagine you go into a store and buy something. The product already has a history behind it. Someone designed it, somebody else made it, and the store stocked it because it could be sure that customers would buy it. Your purchase is thus preceded by several decisions that are all linked to an exchange of information.

Before we actually take the product and pay for it, we undergo a more or less intense deliberation: weighing the costs, our budget, our desires and our needs. This internalized matching process can take place in very different ways depending on the person and the situation. Some people have to think through every cent they spend; others are largely free of this concern. Also, in a non-money economy, it won't always be the case that we'll be free from such concerns. Some wishes will still go unfulfilled, and some will remain unfulfillable. Even in an economy without money, we won't be able to possess all that is denied us under the regime of money. Only the conditions and the procedures will change, but they will do so fundamentally and for the better.

With or without money, the decisions we make are always part of a broader flow of information. When we buy something, that sends a message that more of the same product is needed. That fact is combined with similar information at the point of sale, and from there, the message is sent to the producer. There is always a second current with information running parallel to the flow of money and payments, which controls production, the flow of goods. Matching would dock directly onto this secondary flow of information. (…)

5. Value

There are no prices without money, at least not in the traditional sense, in which an identical number appears on both sides of a symmetrical transaction. We have already done away with a single, universally valid system of measurement. That does not mean, though, that in a data-based, algorithmic economy we will make calculations without numbers. The question is simply what will be counted, and where.

Let us consider for a moment what prices mean in an economy based on money. Ideally, the price illustrates what any and all participants in this transaction and in comparable transactions have agreed upon. The abstract setting in which this agreement is reached is called the market. Local prices might deviate from the market price, but not by much. Otherwise, they will be made to match through arbitrage. Values, in contrast, are always relational. They are only valid for someone in particular, at a specific time and a specific location. This relationship is reflected in the way we speak, given that everything has a price, but each person assigns a specific value. Values represent needs, wants, expectations, and effort. Prices are determined by the market. In a non-money environment, in the absence of prices, matching will relate to assigned, subjective values.

The matching process relies on a multitude of different values, which the various participants assign to the transaction. The comparison and the calculation involved in the transaction do not rely on a common representation in the form of a price, but take form based on the behavior and the economic history of every participant.[1] In the end, there isn't one sum that is valid for every price. Instead, all that is needed is consensus regarding the transaction.

Since values are always valid for somone, they have what we might call a reach. That is to say, they are valid for a specific group of people, and they relate to a specific time or place. There is no single, fixed value of a thing or a good. Nevertheless, we can distinguish, roughly, between three types of value, each of which represents a different reach.

The one with the smallest radius, the micro domain, refers to a transaction evaluated by an individual based on his or her momentary needs in a specific situation. This type of value is closest to our personal experience and to our behavior on a day-to-day basis. This value is connected, in a very personal way, to our mood and to our state of mind at a split second in a given situation.

Under the regime of money, this everyday form of valuation based on very personal factors is replaced by a measurable, general value. Its sense of generality, however, is limited and is not all-encompassing.

The second type of valuation has a medium-range reach. It consists neither of the totality, nor of the singular; it derives from a limited field of

[1] By forgoing (monetary) representation, the approach of a non-money economy draws nearer to the philosophical approach, based on relations, of inferentialism. "For the content of each concept is articulated by its inferential relations to other concepts" (Brandom 2000: 15f.)

comparable and linked transactions. This valuation is thus nearest to prices as we know them, as they appear on the market.

The greatest possible reach is possessed by the total valuation, which incorporates any and all external factors and potential consequences. In an ideal case, it is valid worldwide for any length of time. In such a way, values in the macro domain achieve the greatest possible degree of sustainability. Today, for example, we find these kinds of valuation in the long-term models of climate researchers.

We come in contact with the various domains of value every day. Take a trip, for example. Imagine I'd like to go visit a friend, but I'm in no particular rush to do so. If the price of the flight is low enough on a day that's convenient for me, I'll buy the ticket—as soon as my personal micro value outweighs the fluctuating market price. Were I to account for the value of "sustainability," however, I'd probably either cancel the trip or find another means of transportation.

In a non-money economy, all three of these domains of value can influence the matching process. Not in the sense of do-gooders wielding control over taste—"You all should stop eating meat for the sake of sustainability!"—but rather communicated in a neutral way, so that it's still always possible to say "Actually, I don't care."—in the sense of overwriting macro concerns with micro desires. The way in which things would differ from today is presumably that the macro values taking sustainability into account would no longer simply, habitually, be ignored.

The way in which we set the matching algorithm to relate to valuations is, in fact, a political decision, since the matching algorithm acts as an intermediary between personal freedom and general interest. This relates directly to the function of the three domains of value, since they correspond to a political decision made concerning the relationship between the scales of value.
(…)

6. Activity Instead of Labor

Hardly any other term has been used in such confusing ways as "labor." In the first place, we have "workers," who in German today are called *Arbeitnehmer*, which incorporates the verb *nehmen* (to take), as if they take something. They work for so-called *Arbeitgeber*, which incorporates *geben* (to give), as if employers engage in some gracious act of mercy. In fact, workers "give" companies their labor, and in return the companies give them money. This

twisted rhetoric, which is loaded with political and economic implications, also includes talk of "job creation." Whenever you hear someone talking about that, it almost never has to do with the well-being of workers. Instead, it usually has to do with support given to corporations and with improving investment—that is to say profit—conditions.

These days, the way investors and most of our politicians speak about labor stands in stark contrast to conventional left-wing speech, which sounds almost equally obscure. For the old Left, "labor" serves as a political battle cry. It is closely linked to exploitation, domination, coercion, and debasement. The separation of the world into exploited workers and the exploiters who draw a surplus from them restricts itself to a simplified dichotomy of good and evil. Underlying perpetual class warfare is this moralistic idea of work. It occupies an indispensable position, ideologically speaking. It is essentially dogma: If you work, you suffer. It is reminiscent of the Christian motif of Christ suffering for the justice of the people. On the other hand, enjoying one's work is almost perceived as heresy.

The twisted political rhetoric regarding labor extends beyond the contemporary moment into the future. Artificial intelligence, algorithms and robots will take our jobs, as the saying goes. Constantly, there appear new lists of endangered jobs. It's as if any activity that can be automated is something we should fight to save from machines taking it over. But do we really need to save the job of truck driver? What about that of the launderer, who used to wash clothes by hand in the river, and whose job was made obsolete by washing machines? Why not go back to the time of human "computers," primarily women, who once worked in large offices doing calculations by hand?

It doesn't make any sense to preserve jobs that machines are capable of automating just so that people—who anyway often loathe their jobs—can keep them. The problem isn't with the proliferation of machine work, but with the inability of the economic regime to distribute the benefits of automization fairly.

Since the invention of the first tool, people have always worked with technology and, at its frontiers, found new tasks for themselves. Things will be no different in the case of so-called intelligent machines. The question of what work will be taken over in the future by machines and bots is, in a non-money economy, irrelevent.

For every task that we allow to be automated, new activities will emerge within the same field. The idea that machines take work away from us erroneously predicts a future totality based on a single event. If every possible task were automated and all workers were laid off, in the end we would have an army of robots that would offer everything, sure. But it wouldn't find buyers for anything, because no one would be able to afford anything. This won't happen. It's not possible that work as we know it from this transition phase will

endlessly decrease in value, spiraling down without arriving at the contradiction of a world in which everything is on offer, but no one has anything.

At the moment, work is branching into two categories: either we work under machines or over machines. In the first case, we assist machines, and we walk side-by-side with them into a fatal competition. The price we pay for that contends with the cost of the machines and thus is not enough to live on. The idea of subsidizing people, for example through a so-called universal basic income, would only further propel them to pursue underpaid work that could actually be accomplished by machines.

In the other case, that of work over machines, people are allowed to control and utilize machines and thus remain part of the shrinking middle class. Here too, workers act as attendants, but they remain servants of a small class of investors.

Under the conditions of global networks, ownership over the means of production, which in a classical industrial model brought with it power over machines and thus over labor, will be replaced by another privilege. In the new digital economy, platforms will take the place of means of production. According to the law of networks, the largest network is always the most attractive, so every function has a corresponding monopoly that is limited to a single task—search engines, online marketplaces, friend circles, image circulation. The majority of the profits fall to the large networks.

Doing away with money won't have much of an impact on their monopolies. This issue has to be resolved in a different way. But even if this monopolistic tendency were to remain the same under the conditions of a non-money economy, profits would no longer accrue to the same degree in the absence of money.

In a non-money economy, labor as we know it would change, and our activities would be divided in a different way. From this perspective, labor is no more than a form for organizing human activity that was brought forth by industrialization and that developed under the conditions of money.

In order to analyze the future of "labor," it will be necessary to stick with the abstract, umbrella term of "activity." Most of the time, we're doing something. In thinking about what we do, it will intially suffice to distinguish between two types of activities: relational and non-relational. Whether what we do is relational or not depends on others, not on ourselves. It has long been the case that simply doing something does not mean it has value. Only when it has a use for others does an activity become relational and meaningful. Relations have the same structure as links. They point to something, and in

that, they provide a sense of confirmation. When someone clicks on a link, that indicates that the information has some kind of value. When something is used, forwarded or utilized, that sets up a relation. Only through this relation does the activity come to possess value.

Only when an activity sets up relations does it have any value. To give an example: When a number of people read a piece of information, they refer to it. In the process, it gains value, but so does the act of reading, which in itself is a form of value creation. The existence of a successful relation is what brings an activity into an economic relationship.

How might we assess the value of such relational activities? Here, we can set up an analogy using the term "value." The position and the vector in a network account for the value. That applies to things just as much as it does to information and activities.
(…)

7. Things and Data

A number of things are already surrounded by data. That goes not just for information about things, but also for things that speak to one another through data and that are aware of their surroundings. The era of thoughtless objects is coming to an end. This will have various consequences, both in terms of the economic as well as the philosophical status of things.

By "thing" here, I mean every object in the sense of an object-oriented programming language—that is to say, not only material things, but also events, living creatures, interfaces, archives, data (yes, there is data about data) or even protocols and connections. The notion of a "thing" fits better than that of an "object," since the direct translation of object into German is *Gegenstand*, whose roots suggest something standing across from us, or in opposition. The English verb object sets up the same relationship. But things also exist without us. That is a crucial point when it comes to things that can think for themselves.

The existence of things that, themselves, act leads to a reality that challenges our classical, language-oriented epistomology. Humankind loses its exclusive privilege to perceive and comprehend the world and exercise its influence on it. Some things that act will provide us with information about their reality, while others will behave however they see fit. By acting with one another, they will participate in the economy. Thus, though they will not necessarily have equal rights or their own parliament, they will become active

participants in economic life according to their status as things and with rights commensurate with their reality.

Things will become quite smart. It will no longer be the case that things simply know more than we do; they'll also talk to one another and draw conclusions based on the knowledge they acquire through communication and negotiation. Their exchanges and the decisions they make might help us overcome the commodity forms that are inscribed within money. Instead of the character of the product, which today seems so important, the processes and activities behind things will come forth.

In technical terms, functions will become more important than data types. In philosophical terms, processes will come to take the place of beings; functionalism will come to replace ontology. It won't matter what something is, only what it does. This could be a premature and vague hope, but in some cases the shift is already apparent. Let's look at the changes happening in three instances: data things, cars, and in the home.

When it comes to interactions with data objects, some of the basic assumptions from the previous economy will be reversed. Data allows itself to be copied as often as we wish and at no cost. So expenditures only arise during production, regardless of whether it's a film, a book or a piece of music that we're talking about. Reproduction and distribution are free. For that reason, more than any other product, cultural objects and data have been affected by the technological change, provided that they consisted only of data and required neither a specific material, nor the presence of something, or someone, in particular.

Originally, in an effort to preserve the traditional model of marketing based on material reproduction, access to data was artificially made scarce. Various forms of access, each suited to the technology at the time—downloading, streaming, etc.—were criminalized in order to maintain, albeit artificially, the scarcity of pre-digital times. Now, there exist myriad platforms offering a simplified version of access for a monthly fee. To sell their services, they continue to rely on at least impeding the free transfer of data.

The paradox is that the sole meaningful use for culture, namely reception, was not yet thought of as a means for adding value. In fact, a text exists in order to be read; music, to be heard; an artwork, to be seen or in some way perceived. When money is the only way to interact with culture, we are forced to treat cultural products in a way that is contrary to their basic aim. In an economy not based on money, this relationship is reversed. A work of art, a piece of music, or a text will become more important and will be awarded more value the more often it is "used."

(…)

11. The Transition

It won't take a revolution to get rid of money. It will probably happen on its own. We might not even recognize the transition at first. Already now, there is a lot suggesting the shift is under way. It's just that we don't perceive it yet because we don't know exactly what's coming.

It should come as no surprise that the terms to describe and comprehend a shift only emerge at a later point in time. Something changes, and then only later, once we have begun to understand what took place, do we find the right words for it.

The chapter about media addressed the two phases that occur within a transformation in media: In the first phase, older practices are imitated using new media. In the second, new aesthetics and formats take shape. These two phases also occur in the case of the terms we use to describe and observe our surroundings as well as the shifts within them.

In the first phase, we hold onto old concepts. New technologies and the forms they take are described with metaphors of excess, as "tides," as "risks," as "challenges." That vocabulary doesn't name what's new; instead, it frames new phenomena as dangerous. The general attitude remains protective, defensive, skeptical, fearful.

The second phase calls forth a series of concepts that describe the new practices in new ways, but without being able to connect to previous theoretical frameworks and without achieving an overarching historical understanding of the situation. In the past few decades, the prefix "post-" came to serve as a way to suggest a shift, although it indicates nothing more than the lack of an adequate term.

Only at the end of the second phase do we finally achieve a fitting description for the shift. It happens once we can look back over the state of affairs from within a new, yet fully established, practice. What we think of as the truth is determined not by its accuracy, but by its adherence to the dominant, new, descriptive, and theoretical framework. The past must perpetually be reinvented. Only in retrospect does the accepted version of events speak from whichever perspective has been generally accepted—in the sense of whichever social practice dominates within a field determined by media and technology.

At the moment, we find ourselves in the first phase of the transition, with the second about to start. We have yet to arrive at the language and the terminology with which we will later describe the events of the future. As a result, everything said now will later appear fallacious, obscure, overly romantic or eccentric. But that is exactly what makes speculation so appealing.

For the time being, we are left with no choice other than to enter this hermeneutic roundabout against the flow of traffic.

The clearest evidence we have that we're now moving beyond money is data's relation to prices. As the available data becomes more precise, the signal represented by the price as well as whatever information it still generates become less important.
(…)
We are unable to perceive the fact that we're in the middle of a transition toward a non-money economy because we're unable to conceive of our daily economic routine in any way other than through the medium of money. There are some practices that are further along in the process, such as friend groups on social media platforms or clans in online computer games. But even they barely realize they are on the path toward the elimination of money.

References

Brandom, R. (2000), *Articulating Reasons*, Cambridge, MA: Harvard University Press.

5.3

Money and Digital Media

Jasmin Kathöfer and Jens Schröter

When speaking about a post-monetary society, there are good reasons to connect this question with that of digital technologies or, respectively—inasmuch as such technologies are always information processing systems—with digital *media*.

Thus, whether programmable (and hence "smart") digital media technologies could not perhaps come into conflict with the capitalist form of society has long been discussed. There is, for example, a debate about whether digital products can still assume the commodity form at all (cf. Lohoff 2007; Meretz 2007)—and the (at least momentary) signs of crisis in the music industry appear to confirm these doubts. There is also discussion about whether the technological "revolutions" of robotics, AI, the Internet of Things, etc. do not lead to an "Industry 4.0," in which (for the first time in history) so much labor is being made obsolete that the preservation of the labor society becomes impossible.[1] It seems as if in the case of digital technologies, one would be "reminded of the Marxian contradiction between forces of production and relations of production" (Winkler 2004: 29).[2]

The problem of the suitability of digital media to a society based on commodity exchange, wage-labor and hence money points to the possible emergence of a technological upheaval, which would not, of course, deterministically entail a social upheaval, but might indeed, *firstly*, make one *necessary*. This does not, however, yet tell us anything, *secondly*, about whether digital media also make such an upheaval *possible*. The question is: Can digital media be used to develop alternative—let us say—structures or

[1] This is, in any case, a standard argument, for example, of the value-critical discussion. See, for example, Lohoff and Trenkle (2012: 79–90). See too the review of the literature by Schröter (forthcoming)

[2] In the final analysis, this conflict between digital technologies and the capitalist form of society raises confusing questions for both the history of technology and media history: How can technologies that have arisen in capitalism ultimately come into conflict with it? Does this not point to a limit of all social construction of technology? Difficult questions, which we can not pursue further here.

mechanisms that replace money and the market in the coordinating roles that they currently play? This cannot mean identically duplicating them, since that would be pointless. Hence, moreover, some phenomena that are regarded as alternatives, like bitcoin and other cryptocurrencies, are precisely not alternatives, simply because, for all their differences, they are still money (cf. Golumbia 2015; Ortlieb 2014). The objection that one simply does not need *any* replacement for the coordinating mechanisms, since all coordination could take place in direct (verbal?) communication, is not a realistic response—even leaving aside the fact that direct (verbal?) communication would, then, be the replacement (see below). In order to approach the question concerning alternative forms of coordination, we will here discuss Friedrich August von Hayek. Why Hayek of all people: arch-liberal (in the classical sense) and tireless defender of the market?

Hayek described the coordinating role of the market in terms of knowledge. For Hayek, the special role of the market is to serve as a kind of medium that can actualize and coordinate the dispersed knowledge of society's members: "The various ways in which the knowledge on which people base their plans is communicated to them is the crucial problem for any theory explaining the economic process" (Hayek [1945] 1948: 78).[3] But this knowledge is not available to anybody in its entirety; it is *distributed*. In addition, it is *situated*, as Hayek never ceases to emphasize. More precisely, he differentiates various forms of knowledge: We can distinguish roughly between global, universal knowledge—like, say, the knowledge of the natural sciences—and the local, situated knowledge that is required for carrying out economic operations.[4] In particular, Hayek criticizes the fact that the model of natural-scientific knowledge has been projected onto economic processes, thus giving rise to the misconception that one could, so to say, transparently bring together this knowledge in one place. This is Hayek's fundamental argument against every form of central economic planning. Thus, he emphasizes:

> If we can agree that the economic problem of society is mainly one of rapid adaptation to changes in the particular circumstances of time and place, it would seem to follow that the ultimate decisions must be left to the people who are familiar with these circumstances, who know directly of the relevant changes and of the resources immediately available to

[3] There is a large literature on the historical evolution of Hayek's position in the context of the so-called "socialist calculation debate." See, for example, Vaughn (1980) and Caldwell (1997).

[4] This is why Burczak (2006: 17–37) also speaks of Hayek's "post-modern economics."

> meet them. We cannot expect that this problem will be solved by first *communicating all this knowledge to a central board which, after integrating all knowledge, issues its orders*. We must solve it by some form of decentralization. But this answers only part of our problem. We need decentralization because only thus can we insure that the knowledge of the particular circumstances of time and place will be promptly used. But the "man on the spot" cannot decide solely on the basis of his limited but intimate knowledge of the facts of his immediate surroundings. There still remains the problem of communicating to him such further information as he needs to fit his decisions into the whole pattern of changes of the larger economic system.
>
> Hayek [1945] 1948: 83–84; emphasis added

This "communication of information" already sounds a lot like a medial process: One need only, for example, think of the fact that Friedrich Kittler (1993: 8) defined media as technologies for saving, processing and communicating information. According to Hayek, it occurs precisely by way of the price system: "We must look at the price system as such a mechanism for communicating information" (Hayek [1945] 1948: 86).[5] Expressed in the medium of money that is exchanged for commodities, prices signal production needs, scarcity, etc.[6] The first reason why our project has to deal with Hayek is that a post-monetary society must be able to specify a different mechanism of coordination. And it must, moreover, be one that is not susceptible to the same extent or at all to the problems of money-centered coordination: hence, say, the accumulation of monetary symbols as an end-in-itself, with possible consequences like the destruction of the environment, or the increasing rendering superfluous of people in the production process, with serious economic disturbances as consequence. For, from a media-theoretical standpoint, one can critically note that Hayek conceives the "price mechanism" as transparent medium of distributed and situated knowledge, without supposing that the medium can have its own dynamic.[7] The idea that the medium could become the actual center of the whole affair appears to be foreign to Hayek. For Hayek, money is in fact and literally a "cleverly devised

[5] Cf. also Lavoie (1990: 74): "[T]he price system is a crucial knowledge medium."

[6] Cf. Lavoie (1990: 73): "Economists largely agree that the price system is a vital source of information for decision making. Scarce resources, by which economists mean anything that is not so abundant as to be a free good, need to be allocated in regard to their relative scarcity, and this is at least approximately gauged quantitatively in money prices."

[7] The connection between Hayek's conception of the price signal and the thesis of the neutrality of money, such as predominates in more neoclassical traditions, needs to be examined in greater detail.

expedient," just as Marx critically remarked about "the economists."[8] Drawing on Marx's enigmatic formulation that capital is an "automatic subject,"[9] Marxian—for example, value-critical—approaches, on the other hand, insist on the dynamic proper to the value embodied in money.

That medial processes are central to Hayek became especially clear during and after the so-called "socialist calculation debate" between Mises, Hayek and their critics. Thus, for example, Oskar Lange (1972: 402) later remarked: "The market process with its cumbersome tatonnements appears old-fashioned. Indeed, it may be considered as a computing device of the pre-electronic age."[10] So, if the market and its price system are a kind of digital medium (inasmuch as prices are digital—they do not involve any continuum, but only discrete gradations), what, then, does the emergence of digital media in the narrower sense mean? Could the price system not only be disrupted by these digital media, as already discussed, but possibly even, in a positive sense, replaced by them? Lange seems to suggest this. Like Peters (2000) or Cockshott and Cottrell (1993, 1997) later on, he claims that with modern computers a kind of central planning is indeed possible. (Cockshott and Cottrell, for instance, retain money-like labor-time certificates, which, however, cannot be accumulated.[11]) Lavoie (1990: 75) calls this "computopia":[12] "[A]n image of an economy being centrally planned by a massive computer. . . . Do the undeniably rapid advances in computer science suggest that even if this computopia is farfetched now, it might become a realistic alternative in the future?" But the whole debate revolves around the question of *market versus central planning*, as is underscored by the paradigmatic role of central mainframes. Interestingly, however, already in Hayek ([1945] 1948: 79), we can read:

[8] Cf. Marx (1970: 51; translation modified): "In other words, on the pretext of examining simple barter, the economists display certain aspects of the contradiction inherent in the commodity as being the direct unity of use value and exchange value. On the other hand, they then consistently cling to barter as adequate form of the exchange process of commodities, which is merely linked to certain technical inconveniences, for which money is a cleverly devised expedient. Seen from this quite superficial point of view, an ingenious English economist has thus rightly maintained that money is merely a material instrument, like a ship or a steam engine, but not an expression of a social relation of production and, consequently, not an economic category." See too the discussion of mediality and the commodity form of money in the Lohoff, Pahl and Schröter "Trialogue" in the present volume.

[9] Marx's formulation is to be found in Marx (1976: 255). Cf. Kurz (2004).

[10] Cf. also Lange (1972: 402): "In other words, the market may be considered as a computer sui generis which serves to solve a system of simultaneous equations. It operates like an analogue machine: a servo-mechanism based on the feedback principle. The market may be considered as one of the oldest historical devices for solving simultaneous equations."

[11] On this subject, see too Peter Fleissner's contribution in the present volume.

[12] On computer utopias, see too Annette Schlemm's contribution in the present volume.

> This is not a dispute about whether planning is to be done or not. It is a dispute as to whether planning is to be done centrally, by one authority for the whole economic system, or is to be divided among many individuals. Planning in the specific sense in which the term is used in contemporary controversy necessarily means central planning—direction of the whole economic system according to one unified plan. Competition, on the other hand, means decentralized planning by many separate persons.

This is to say that the market order is a sort of *decentralized planning*, and to function as such, a system of mediations must be established to facilitate the exchange of knowledge. (It is not at all obvious, however, why decentralized planning must absolutely take place by way of competition. This is an important point, to which we will return below.) Lavoie (1990) suggests that we can understand the "market" in three different ways, one of which—the market as a motivator of performance—we will bracket here. He differentiates the market as a kind of computer, in the sense just discussed, from an understanding of the market (following Hayek) as a kind of system of communication. This is underscored by the fact that Hayek ([1945] 1948: 87) described the "price system as a kind of machinery for registering change, or a system of telecommunications"—a description which is reminiscent, say, of the telephone network. Again Lavoie (1990: 78) on the market as a system of communication: "There is thus a bidirectional communicative process that produces a kind of social intelligence that depends on but goes beyond, the individual intelligences of the system's participants." Here, an entirely different medial model emerges: No longer a *central computer, a computer as calculator*, but rather—since the "bidirectional communicative process" is not only reminiscent of the telephone network, of course—networked computers. In their legendary 1968 text, "The Computer as a Communication Device," Licklider and Taylor explicitly discuss the possibility of coordinating "distributed intellectual resources" with networked computers. Since then, at the latest, the image of the computer as medium of communication has been supplanting that of the computer as calculator. Thus, the question arises of whether the "bidirectional" (or even "multidirectional") communicative process has necessarily to take place by way of price signals expressed in money. Here Lavoie (1990: 74) on the market yet again: "What is crucial to its cognitive function, however, is that it provides a discovery process that by its very nature cannot be centrally directed but depends on a bidirectional communicative interplay between its participants." The continuous rejection of centralized structures in favor of distributed ones is strongly reminiscent of the discussion in the 1960s about the advantages of distributed computer

networks: since the latter, in contrast to centralized structures, are not so vulnerable to military strikes. In any case, the following description of the market by Hayek ([1945] 1948: 86) already sounds a lot like a network: "The whole acts as one market, not because any of its members survey the whole field, but because their limited individual fields of vision sufficiently overlap so that through many intermediaries the relevant information is communicated to all." Now, at the latest, we can ask whether beyond the alternatives:

1. market (= decentralized planning with money or the price system as "system of telecommunications") and
2. state planning (= central planning with a central computer; depending on the approach, with money still, though sometimes also conceived without money), there is not also
3. a third conceivable alternative: namely, *decentralized* planning, in which the "system of telecommunications" is not created by way of price signals, *but rather by way of other forms of communication: for example, networked computers*. (This obviously resembles the problem posed by Marxian criticism of replacing indirect mediation via market exchange by a direct communicative control of production. We will return to this matter further on.)

Concerning the market, Lavoie (1990: 78; emphasis added) writes: "This knowledge, as *encapsulated in prices*, serves in turn to guide the decisions of individual participants." If knowledge transfer is so important, one could ask whether it would not be far better if the knowledge were not "encapsulated in prices," but rather directly available (unless one could separately show that this "encapsulation" is indispensable: e.g. as a kind of reduction of complexity). A decentralized collection, processing and distribution of information could take place using data networks. One should by no means think here only of communication in the sense of exchange in a natural language, but rather one should also consider the possibilities created by the rendering mobile of the internet in the form, for instance, of mobile and GPS-tracked devices. These mobile media are in keeping with the "knowledge of the particular circumstances of time and place" on which Hayek placed so much emphasis. Today, mobile media are essentially situated media. Hence, they can, in principle, depict and process local knowledge and thus connect it with other local knowledge in a network.

There is another aspect to be found in Hayek that is not identical with the question of the spatio-temporal situatedness of knowledge: namely, the question of "tacit knowledge" (cf. Oguz 2010). The thesis is as follows: "The impossibility of conveying tacit knowledge of market participants to a higher

authority became central to his defense of decentralization and free market" (Oguz 2010: 146).[13] Presumably, this means that the market makes knowledge usable that participants themselves cannot articulate—and hence a central planning cannot make usable. However, the assumption that the price system somehow makes this tacit knowledge available, after all—in a "communicative process," as Lavoie (1990: 78) writes—shows that it is not entirely incommunicable, since otherwise it could not have any relevance for the market process either. Hence, is it not conceivable that non-verbalized knowledge could also be made operational in a different way? And do not the techniques of profiling and tracking that are characteristic of "social media," as they are tellingly called, do just that? We will return to this point below.

It is likewise by no means apparent why only the market or competition can function as a discovery procedure—as Hayek ([1968] 2014) argues in another famous essay. Is it not also possible for cooperation to be a discovery procedure, as both developments in the area of software (keyword: open source) and classical large-scale military, scientific and industrial research suggest (cf. Allen and Potts 2016)? In fact, even if the original impulse for it comes from competition, the development of marketable products for the most part presupposes extensive cooperative processes: processes that are being expanded and fostered by the use of networked computer systems. This has led to the formation of a special area of research in so-called "computer-supported cooperative work" (cf. Schüttpelz and Gießmann 2015).

It may be of interest to note here that, even if it is centered on the market, Hayek's emphasis on self-organization was also an important influence on the Bloomington School, out of which, as is well known, Elinor Ostrom's research grew (cf. Horn 2013: 228). We can only allude to this aspect here, but in the preface to the German edition of her main work on the commons, in particular, Ostrom emphasizes the key role of communication for coordinating cooperation (cf. Ostrom 1999: xviii and *passim*). We can again ask whether the (at least in Western countries) nearly ubiquitous networking of mobile media does not provide a favorable infrastructural precondition for commons "beyond market and state," as it is called in the subtitle of a well-known book (cf. Helfrich and Heinrich-Böll-Stiftung 2012). (The German translation (Ostrom 1999) of Ostrom's *Governing the Commons* has the same subtitle.) As far as we can see, Hayek's approach of emphasizing decentralization and self-organization, as well as emphasizing situated and tacit knowledge and the need for discovery procedures, in no way excludes the possibility that there

[13] Cf. Lavoie (1990: 75): "If the cognitive function of markets were only computational, then very few elements of capitalistic markets would need to be borrowed to make socialism work."

could be ways of organizing production, allocation and distribution other than the market and hence the exchanging of commodities for money. To this extent, it seems to us that the accuracy of Burczak's (2006: 138) claim has yet to be established: "Post-Hayekian socialism is necessarily market socialism. National economic planning, whether authoritarian or democratic, is a dubious ambition for the future of socialism." Don Lavoie (1990: 75) similarly suggests:

> Those nonmarket forms of socialism that used to argue for the *abolition of money* needed to be reminded that the cognitive function markets serve requires that profit-loss calculation take place in terms of a common denominator. There can be no systematic comparison of alternative production techniques without cost calculations in money units, and these at base involve matters of simple arithmetic.

Lavoie thus argues that there would be no "profit-loss calculation" without money. This argument can, nonetheless, be rejected as specious: For money is precisely the medium that makes everything calculable as profit or loss—indeed that requires that everything be calculable in this way—and, of course, *this* form of profit/loss cannot be preserved without money. And it would maybe be a good thing if not abstract profit, but rather, for example, collective, democratic, objective considerations—which should, after all, also be able to bring about a "systematic comparison"—decided which of different "alternative production techniques" gets used. (Cf. O'Neill 1996 on this sort of position in Otto von Neurath, with explicit reference to Hayek; cf. also O'Neill 1999 and Pircher 1999.) Keeping in mind the inglorious role of "externalities," this could perhaps be precisely the way in which better technologies should be chosen. Lavoie's (1990: 74) argument that "markets provide a cognitive aid, in this sense, without which economic activity would be prohibitively inefficient," may be incorrect in the sense that what is important is not always *whether something is efficient, but rather what one wants*.

Nonetheless, Lavoie alludes to a non-trivial point: Money and the representation of products and processes in prices that comes with it make these products and processes comparable and calculable (although only in certain respects). "Systematic comparison" can refer to a "common denominator." This raises a truly key question: For Big Data and other possible forms of data on which post-monetary collective coordination could be based are still quantitative data. The insistence of historians like Jacques Le Goff (2012; see too Kurz 2012) that there was already money before capitalism raises the question of whether there could not also be money after capitalism: money

that would, then, perhaps, not be money anymore.[14] In any case, a post-monetary society cannot mean a post-mathematical society. Instead of commodities communicating, human actors must communicate about their production, and they will have always to consider what seems doable and what does not—and this will make quantitative comparisons necessary. Therefore, the structure and operation of the symbolic system that is used to shift the process of coordination from circulation to production is of central importance. The relation between this symbolic system and quantification has to be clarified. And it also has to be clarified how we can compensate for tremendous advantages of money: its anonymity, but also its extreme reduction of information, which precisely facilitates regional and global economic communication.

But the argument that, at least in principle, non-monetary decentralized coordination must also be possible has not only been attacked by neo-Hayekians like Lavoie and Hodgson. As has already been indicated, the whole discussion that has been conducted here can also be attacked from an emancipatory perspective: Is it not simply an attempt to create technical solutions to social problems? Is not the decisive point rather to replace—along with Marx—the organizational form of production that is coordinated *ex post* by directly communicative *ex ante* production: or, in other words, to replace the "isolated producers" by a kind of grassroots democratic collective production? Yes, that is the point: It is the only way to get rid of markets and money. But the whole question around which the (neo-)Hayekian discussion revolves is *whether ex ante production is even possible*. It is true that Hayek only ever criticized central planning. But Hodgson, for example, attacks grassroots democratic, participatory approaches. In his debate (from 1998 to 2005) with Adaman and Devine, whose goal is democratic planning, Hodgson argued as well that dispersed, tacit knowledge cannot be updated, that the decision-making requires too much time, that the incessant process of discussion obstructs innovation, etc. It is interesting to note that like Hayek—with the sole difference that Hayek does so precisely in a positive sense—the value-critical critic of capitalism, Robert Kurz, also illustrates the indirectness of market- and money-mediated communication using the example of the telephone. Kurz (1999: 785) writes that "the money form . . . is as crazy as if people who live in the same house were only permitted to communicate by satellite telephone." It remains symptomatic in this example that Kurz mentions "people who live in the same house": It is obvious that such people could communicate without a "satellite telephone" or, in other words, without indirect mediation. But the example remains trapped in the apparatus of a

[14] See Christian Siefkes's contribution in the present volume.

local household. *Ex ante* coordination among "people who live in the same house" is easy enough to imagine. But what about on the regional or global level? Here, "satellite telephones" (to stay with Kurz's metaphor) are needed, whereas verbal communication, such as is implied by Kurz's example, is impossible and pointless. *The problem is the schematic opposition between indirect and direct*. It is, of course, problematic that markets and money are indirect, but the answer cannot be an abstract "directness": not only because this has the potential to be totalitarian, but, above all, because it is *impossible*.

Certain social forms are only possible on the basis of certain technologies (there can be no global society without the appropriate media), and this has direct bearing upon the question of a communicative *ex ante* organization of production. If we do not want to believe (like the Hayekians) that *ex ante* production is impossible in principle, then responses have to be found to the question of how one can upscale direct communicative planning, for example, from a manageably small group of people to the regional or global level. How is the discussion time kept efficient, so that it is not only compatible with individuals' private time to themselves, but does not last longer than the problem? How can the multiplicity of possible consultations be organized, so that they remain feasible? *These problems are by no means extraneous or secondary for a society after money*. Rather, they are absolutely key and thus also concern the commons, as soon as we upscale from a local commons to a larger interconnected network. For already just the interchange between two commons, if it is not to become exchange and thus ultimately a market, has somehow to be coordinated by a "meta-commons" (as Meretz puts it in the present volume). Thereby, all—*and indeed really all*—the problems and questions concerning the status of planning come back in. Or, to put it differently, the problems essentially begin where it is not one commons that is at issue, but rather a network of commons (or a trans-local commons). Meretz (in the present volume) suggests resolving these problems, above all, via the concept of stigmergy and mentions "measurements, status signals, tracking data, and affective signals between people," as well as "requirement descriptions, to-do lists, discussions, plans, statistics, wish lists, etc." as "medial mediation of information"—in order then, finally, to call on the nowadays much-discussed blockchain technology. This strikes us as interesting and convincing (even if the concept of stigmergy is also highly problematic, as Christian Siefkes shows in his contribution). It connects up with a current discussion that asks what the medial coordinating mechanisms of a post-monetary society could look like. Also taking Hayek as his starting point, Nick Dyer-Witheford (2013: 12–13) has discussed such questions and different technical options at length in his outstanding essay "Red Plenty Platforms":

> A society of participatory, informed, democratic and timely collective planning would require fast, varied and interactive communicative platforms where proposals could be circulated, responded to, at length or briefly, trends identified, reputations established, revisions and amendments generated, and so on. It would, in short, demand that Facebook, Twitter, Tumblr, Flickr and other Web 2.0 platforms not only themselves become operations self-managed by their workers (including their unpaid prosumer contributors), but also become fora for planning: Gosplan with "tweets" and "likes". . . . Yet perhaps the idea of everyone watching mobile screens lest they miss, not a Facebook poke, but voting the seventh iteration of the participatory plan, duplicates unattractive features of everyday life in high-tech capitalism. So we might speculate further, and suggest that what decentralized collective planning really needs is not just council media but communist agents: communist software agents. . . . Commercially, software "bidding agents" are able to consistently outperform human agents so that "Humans are on the verge of losing their status as the sole economic species on the planet" (Kephart . . .). . . . One can't help but ask, however, what if software agents could manifest a different politics? Noting that Multi-Agent System models can be thought of as a means to answer problems of resource allocation, Don Greenwood . . . has suggested they could be geared toward solving the "socialist calculation problem". As planning tools, Multi-Agent Systems, he notes, have the advantage over real markets that "the goals and constraints faced by agents can be pre-specified by the designer of the model" (Greenwood . . .). It is possible to design agents with macro-level objectives that involve more than just the maximization of individual self-interest; two "welfare" principles that economists have experimented with incorporating are equality and environmental protection sustainability.

We want here to emphasize a different aspect—it has already been mentioned in passing—and to consider a technological apparatus that plays no role in Dyer-Witheford. We believe, however, that it will, in addition to the communication technologies and artificial intelligence that he discusses, play a major role (namely, in efforts to collect and render operational such information as is indispensable for post-capitalist organization). We are referring to the automatic recording of trace-data and profiling.

Every human being has needs: sleep, hunger, thirst, exercise, rest, etc. These are essential to life and their satisfaction has the highest priority. Other needs aim to increase a person's well-being. Such needs are shaped by the respective culture in which a person lives. Advertising, for example, creates

the need to have a certain product by suggesting that the product will make one's everyday life easier or make the consumer more attractive or more fit. The products in question, however, are often products that one could do without or that only apparently contribute to well-being. The sense of happiness triggered by the purchase quickly dissipates and the consumed product is replaced by another "need." One feels the necessity to quell a pseudo-need. Instead of artificially generating such needs, we have to pose the question of what needs really exist. But how can this knowledge be acquired, when neither producers nor consumers can themselves name (to say nothing of predicting) what is needed?

In what follows, we would like to pursue this question by examining the previously introduced thesis that tracking technologies, as well as self-tracking in particular, are able, as pervasive mobile media technologies, to feel out tacit knowledge and render it usable. In order to get closer to an answer to the question, we want first to outline how "knowledge" can be obtained.

The distinction between explicit and tacit knowledge is well-known. According to Ikujirō Nonaka and Hirotaka Takeuchi (1995: 8), "explicit knowledge can be expressed in words and numbers, and easily communicated and shared in the form of hard data, scientific formulae, codified procedures, or universal principles." Per this definition, knowledge is something that is communicable and, above all, conscious. Whereas explicit knowledge can be communicated, expressed and shared, tacit knowledge is subjective, cannot be (directly) articulated and stays in the thoughts of the individual. Nonaka and Takeuchi (1995: 8) distinguish here between two dimensions of tacit knowledge:

> [T]he technical dimension … encompasses the kind of informal and hard-to-pin-down skills or crafts captured in the term "know-how." … At the same time, tacit knowledge contains an important cognitive dimension. It consists of schemata, mental models, beliefs, and perceptions so ingrained that we take them for granted. … Though they cannot be articulated very easily, these implicit models shape the way we perceive the world around us.

Tacit knowledge represents the larger part of knowledge as a whole. If it is to be made usable, it has to be converted into understandable words or codes. For even if it is difficult to express, it can be codified (cf. Kabir and Carayannis 2013: 56), since tacit knowledge consists, after all, of information. Thus, for example, the ability to ride a bicycle is tacit knowledge, which is also implicitly transferred by observation and imitation. Nonetheless, knowledge of how to ride a bicycle can be transposed into a code: for example, using

illustrations that show what needs to be done step-by-step. Another example of the second dimension of tacit knowledge could be describing the feeling of "being cozy." By means of analogies or vivid language, an individual understanding could be made a shared one. The tacit knowledge thus becomes communicable and, to a certain degree, explicit. In the process of converting tacit into explicit knowledge, new knowledge is made accessible (cf. Nonaka and Takeuchi 1995: 9, 12–13) Hayek too turned his attention to tacit knowledge:

> The peculiar character of the problems of a rational economic order is determined precisely by the fact that the knowledge of the circumstances of which we must make use never exists in concentrated or integrated form, but solely as the dispersed bits of incomplete and frequently contradictory knowledge which all the separate individuals possess. The economic problem of society is thus not merely a problem of how to allocate "given" resources . . . it is a problem of the utilization of knowledge not given to anyone in its totality.
>
> Hayek [1945] 1948: 77–78; cited in Nonaka and Takeuchi 1995: 33

Now, Nonaka and Takeuchi (1995) argue that Hayek overlooked the possibility of converting tacit and context-specific knowledge into explicit knowledge. Contrary to his intentions, Hayek's theory of the market is thus static and solely focuses on the efficient use of available knowledge.

As discussed above, the question has to be posed of whether, as against Hayek's view (as well as that of Hodgson (1998, 2005)), tacit knowledge of needs could not also become explicit. Thus, one step in finding out what should be produced consists in collecting implicit knowledge: As already mentioned, Big Data represents one possibility in this respect. The internet with its search engines and social networks (and hence self-established profiles)—but also (online) shopping, client cards, credit cards, "point" cards, etc.—is an important source for generating data and information (and hence knowledge) about customers' (both tacit and explicit) purchasing and consumption behavior. This offers the possibility of compiling profiles of target groups and analyzing their behavior, in order to be able to react to moods and trends. The aim is currently product optimization and the possibility of figuring out in advance how innovations can be better brought onto the market (cf. *Gabler Wirtschafslexikon* n.d.). The collection of data (both self-provided data and data that has been collected by others) often takes place surreptitiously: The persons involved can be identified via their activities and monitored—because they undertake a purchase or have

activated the location data on their smartphones. Big Data thus represents a challenge for data protection, since "often the person affected has not given any authorization for the use of the data. . . . The combination of information that is in itself unproblematic can lead to problematic findings" (*Gabler Wirtschafslexikon* n.d.). The person or persons affected can be classified as not creditworthy, risky or even suspicious, "because [he or she] lives in the wrong part of town, uses certain means of transportation and reads particular books" (*Gabler Wirtschafslexikon* n.d.). One potentially positive aspect of Big Data could be that the needs of users are recognized in advance and he or she, on the one hand, does not need to think any more about obtaining or ordering, but, on the other, has no influence on the things provided to him or her (keyword: pre-shipping/predictive delivery; cf. Lomas 2014).

Tracking technologies also form part of Big Data. But they represent their own group within it. Deborah Lupton notes that a distinction had to be made between data monitoring by oneself and data monitoring by a third party. In the introduction to her book *The Quantified Self: A Sociology of Self-Tracking Cultures*, she sums up this distinction as follows: "Indeed in many cases people have no knowledge of what data are collected on them, where these data are stored and to what purposes they are used by other actors and agencies. These are examples not of self-tracking, but of tracking of the self by others" (Lupton 2016a: 2). Further on, she continues: "Self-tracking differs, therefore, from covert surveillance or means of collecting information on people that result in data sets to which the subjects of monitoring do not have access" (Lupton 2016a: 2).

There are, in fact, a multiplicity of surveillance methods of which people are often not aware: video surveillance (CCTV) and sensor monitoring of movements of people in public spaces, monitoring of communications metadata and internet companies by national security agencies and law enforcement agencies, etc.—even something like biometric screening at airports should be included here (cf. Lupton 2016b: 102).

In contrast to profile creation that occurs surreptitiously, self-tracking involves taking measurements of one's body and one's own self. The aim is "[to obtain] extensive knowledge of oneself. How exactly do I tick, what is especially important or right for me or what precisely is not. What do my habits look like and how do I interact with my environment? These are key questions that are dealt with using analytical observation" (Quantified Self, n.d.). The data is obtained using intricate micro-computers in the form of tracking armbands, smartwatches and other wearables, which can be easily linked to one's smartphone or tablet. Data gathering by way of self-measurement brings to light information from which knowledge can be derived:

> All self-tracking practices are essentially visualization practices, which make something visible that was not visible—in this way—before. They aim to make visible what is implicit and unspoken and thus to make it available for observation, analysis and, last but not least, surveillance and monitoring. . . . In so doing, the gadgets also record expressions of life that were previously not recordable and measurable.
>
> Duttweiler and Passoth 2016: 12

As this quote from Duttweiler and Passoth shows, self-tracking and the technologies associated with it offer the possibility of making precisely that implicit knowledge accessible that previously could not be grasped as a whole. Duttweiler and Passoth also allude to the fact that tracking thereby makes possible reinforced monitoring and surveillance. Users, of course, collect the data completely voluntarily; nonetheless, as a rule, the data has to be uploaded onto an online platform and hence is also available to the manufacturers and service providers.

> As to whether in the age of Facebook, Google, Twitter, etc., the technical and infrastructural possibilities really exist to be able adequately to secure and protect one's own data, the answer is an unambiguous no. . . . The dream of positive self-measurement as successful enrichment of one's own life stages presupposes that the self can always decide about his or her own continued data gathering voluntarily and free from external pressures or structural constraints.
>
> Schröter 2016: 194

But this is not presently the case. Unfortunately, in many service provider "terms and conditions," formulations are to be found that show that, in addition to the data that the users themselves collect, information may also be gathered on the device on which the data is installed (cf. Schaupp 2016a: 15). The data obtained from the implicit knowledge can be sold and used to created "more or less exact psychological profiles" (Schaupp 2016a: 16).

The fact that this data collection and profile creation by third parties represents a problem is known and is being currently debated. Karanasiou and Kang (2016) note that the popularity of sensor-based measurement devices, which are able to track activity, health and mood, appears paradoxical in the post-Snowden era. On the one hand, one is of the view that unauthorized data collection by the state is incompatible with the right to privacy. On the other hand, there is a trend to measuring and gathering one's own data using sensors: "In this sense, it has been suggested that privacy has gradually changed its meaning: in the era of wearable tech we seem to be accepting that

measuring data is not a privacy infringement but a self-surveillance exercise, most acute [*sic*.] to exercising one's right to freely express oneself" (Karanasiou and Kang 2016: 123–124).

Self-tracking, however, not only generates a large amount of data, but also—via the processing of the data—gives users immediate and direct feedback. Every change in activity and every sort of gap can be detected by the use of self-tracking technologies, and it can be detected—thanks to the shortening of the feedback loop—without any loss of time: "Deviation and feedback are then simultaneous" (Schaupp 2016a: 70). Immediate feedback is important for the optimization of a system. Simon Schaupp suggests/advocates using the concept of a homeostat for self-tracking. A homeostat has to have at least three elements:

> Firstly, a sensor, which gathers data on the system to be regulated; secondly, a data-processing or classification mechanism, which filters and structures the collected data in a way that allows it to become relevant to the functioning of the system (a mere mirroring of all the facts pertaining to the system would not represent any gain in information). Thirdly, the homeostat has to have an output mechanism, which feeds the structured data back into the system. This feedback process is supposed to allow the system to adapt automatically to changing conditions: whether in order to maintain a desired state or to develop beyond it.
>
> Schaupp 2016a: 91–92

Schaupp shows very precisely that self-tracking technologies resemble the idea of homeostats. They too possess measurement sensors and help the "system" to achieve self-optimization via feedback. If, now, the system is defined not as a single individual (as is often the case in self-tracking), but rather as a group, then this system too would be able to express its state in data, to make tacit knowledge usable, and to recognize how it can be optimized: to recognize, in other words, what it needs. Tracking thus represents a conceivable option for a form of communication beyond price signals.

In the article "Society's Nervous System: Building Effective Government, Energy, and Public Health Systems" from 2012, Alex Pentland (MIT Human Dynamics Laboratory) asks what potential "pervasive sensing" and "mobile computing" will hold over the next ten years and what challenges are involved, or could be involved, in exploiting this potential (cf. Pentland 2012: 39). Right at the start, Pentland makes clear that current social structures do not use the possibilities of digital feedback technologies to the extent that one could, in

order to be dynamic and responsive: "Instead of focusing only on access and distribution systems, we need dynamic, networked, self-regulating systems that take into account complex interactions. In short, to ensure a sustainable future society, we must use evolving technologies to create a nervous system for humanity that maintains the stability of government, energy, and public health systems around the globe" (Pentland 2012: 39). In the further course of the article, he especially goes into smartphones as "location-aware sensor platforms" that can be used for self-tracking purposes: in order to understand patterns of human behavior, to monitor surroundings (for example, traffic and increased congestion), and to plan social development. In order to solve the problem of privacy and control over the data, Pentland suggests introducing laws that grant individuals a constant right to their own data and the use thereof:

1. *You have the right to possess data about you.* Regardless of what entity collects the data, the data belongs to you, and you can access it at any time. Data collectors thus play a role akin to a bank, managing the data on behalf of their "customers."
2. *You have the right to full control over the use of your data.* The terms of use must be opt-in and clearly explained in plain language. If you are not happy with the way a company uses your data, you can remove it—just as you would close your account with a bank that is not providing satisfactory service.
3. *You have the right to dispose of or distribute your data.* You have the option to destroy data about you or redeploy it elsewhere.

Pentland 2012: 41

The precise details of such laws have, of course, to be discussed and adapted to the social situation. The possibilities mentioned here merely represent a suggestion. Both Pentland and Schaupp continue to discuss the technologies in connection with markets. As a "cybernetic self-technology," Schaupp (2016b: 82) sees self-tracking as "in no way just an individual practice," but rather the "expression of a political-economic shift," which he describes as "cybernetic capitalism." But in a society after money, the question of tracking technologies as part of capital accumulation no longer arises. If one's own data is protected, and it is assured that it is only used to generate the information required for the production and distribution of goods, self-tracking offers everyone the opportunity of greater participation in the organization of their own living conditions. This extends not only to the domains of existential and individual needs, but also to immaterial needs like, for example, health care, child care and elder care. Moreover, digital data

collection would have the advantage (similar to that of the money) that no "revealing" of one's own needs would be necessary. All procurement could be done anonymously and privacy would be preserved.

Our discussion is merely an outline and has only examined in somewhat greater detail one particular technological apparatus, viz. tracking (which was also mentioned by Meretz in the present volume), in order to suggest how such technologies could be used to solve the problem of knowledge that, according to Hayek and his followers, makes all communicative *ex ante* production impossible from the start. The point is not to find a "replacement" for money, but it is to find an alternative mechanism to the market. Merely speaking vaguely of "social relations" or of the fact that hitherto private producers must now communicate is no longer sufficient. One has at least to be able to suggest a possible solution to the problems of knowledge and complexity of production that exceeds the boundaries of just one's own household. Otherwise, one will always be subject to the ridicule of the Hayekians.

From an emancipatory perspective, it is often said that technical solutions cannot be substituted for social ones. It is important here to make clear that this criticism is correct to the degree that, for example, no technology, no matter how advanced, per se creates a post-capitalist form of organization. (A certain asymmetry is, however, to be observed in this regard: value-critical approaches, for instance, emphasize that there is no automatism that leads to an emancipated, post-capitalist society; but for value criticism, there is indeed an automatism that leads the competition-driven suppression of labor by new technologies up to the "inner limits" of capital.) *But it is wrong inasmuch as it starkly opposes the "social" and the "technical," as if they were separable.* The technical is always already social, but the social is also *always* already technical. A society after money is not a society after mediality and technology. Rather, it is a society that has to re-functionalize the given technical resources and possibly embark on entirely new technical paths, in order to solve the knowledge, complexity and coordination problems of trans-local production.

As against Hayek's conclusion that the preeminent role of situated and tacit knowledge makes central state planning, and indeed any sort of communicative planning, impossible, and the market, and hence exchange for money, indispensable, we could thus say that this conclusion fails to take into account that the indirect communication of situated and tacit knowledge—the possibility of which is, in principle, assumed by the price mechanism—could also take place without money under the conditions of computer networks and mobile sensors (smartphones). Hayek's emphasis on decentralization and self-organization is undoubtedly correct. *But why should the money-centered market be the only or even the last and highest form of such*

organization? Hayek's "evolutionary agnosticism," as Vanberg (1994) once critically termed it, implies the possibility that the market and money are also only temporary forms, which will disappear again, perhaps in conflict with digital technologies, in the course of social evolution. Thus, a recent introduction to Hayek's work notes with evident dread: "What if the evolutionary process, which in the past gave rise to the institutions of the market, of law, and of private property, takes entirely different paths in the future" (Horn 2013: 210)?[15]

References

Adaman, Fikret, and Patrick Devine (2001), "Participatory Planning as a Deliberative Democratic Process: A Response to Hodgson's Critique," *Economy and Society*, 30 (2): 229–239.

Allen, Darcy W. E., and Jason Potts (2016), "How Innovation Commons Contribute to Discovering and Developing New Technologies," *International Journal of the Commons*, 10 (2): 1035–1054.

Burczak, Theodore (2006), *Socialism after Hayek*, Ann Arbor: University of Michigan Press.

Caldwell, Bruce (1997), "Hayek and Socialism," *Journal of Economic Literature*, 35 (4): 1856–1890.

Cockshott, Paul W., and Allin Cottrell (1993), *Towards a New Socialism*, Nottingham: Spokesman.

Cockshott, Paul W., and Allin Cottrell (1997), "Information and Economics: A Critique of Hayek," *Research in Political Economy*, 16: 177–202.

Duttweiler, Stefanie, and Jan-Hendrik Passoth (2016), "Self-Tracking als Optimierungsprojekt?," in Stefanie Duttweiler, Robert Gugutzer, Jan-Hendrik Passoth, and Jörg Strübing (eds.), *Leben nach Zahlen: Self-Tracking als Optimierungsprojekt?*, 9–42, Bielefeld: transcript Verlag.

Dyer-Witheford, Nick (2013), "Red Plenty Platforms," *Culture Machine*, 14: 1–27.

Gabler Wirtschafslexikon (n.d.), "Big Data," Springer Gabler Verlag. Available online: http://wirtschaftslexikon.gabler.de/Archiv/-2046774198/big-data-v3.html (accessed January 9, 2017).

Golumbia, David (2015), "Bitcoin as Politics: Distributed Right-Wing Extremism," in Geert Lovink, Nathaniel Tkacz, and Patricia de Vries (eds.),

[15] Cf. Hayek ([1964] 2014: 273): "We are probably also entitled to conclude that our present values exist only as the elements of a particular cultural tradition and are significant only for some more or less long phase of evolution—whether this phase includes some of our pre-human ancestors or is confined to certain periods of human civilization. We have no more ground to ascribe to them eternal existence than to the human race itself. There is thus one possible sense in which we may legitimately regard human values as relative and speak of the probability of their further evolution."

MoneyLab Reader: An Intervention in Digital Economy, 117–131, Amsterdam: Institute of Network Cultures.
Hayek, F. A. ([1945] 1948), "The Use of Knowledge in Society," in F. A. Hayek, *Individualism and Economic Order*, 77–91, Chicago: University of Chicago Press.
Hayek, F. A. ([1964] 2014), "The Theory of Complex Phenomena," in F. A. Hayek, *The Collected Works of F. A. Hayek*, vol. 15, ed. Bruce Caldwell, 257–277, Chicago: University of Chicago Press.
Hayek, F. A. ([1968] 2014), "Competition as a Discovery Procedure," in F. A. Hayek, *The Collected Works of F. A. Hayek*, vol. 15, ed. Bruce Caldwell, 304–313, Chicago: University of Chicago Press.
Helfrich, Silke, and Heinrich-Böll Stiftung, eds. (2012), *Commons: Für eine neue Politik jenseits von Markt und Staat*, Bielefeld: transcript Verlag.
Hodgson, Geoffrey M. (1998), "Socialism against Markets?: A Critique of Two Recent Proposals," *Economy and Society*, 27 (4): 407–433.
Hodgson, Geoffrey M. (2005), "The Limits to Participatory Planning: A Reply to Adaman and Devine," *Economy and Society*, 34 (1): 141–153.
Horn, Karen Ilse (2013), *Hayek für Jedermann: Die Kräfte der spontanen Ordnung*, Frankfurt am Main: Frankfurter Societäts-Medien.
Kabir, Nowshade, and Elias Carayannis (2013), "Big Data, Tacit Knowledge and Organizational Competitiveness," *Journal of Intelligence Studies in Business*, 3: 54–62.
Karanasiou, Argyro P., and Sharanjit Kang (2016), "My Quantified Self, My FitBit and I: The Polymorphic Concept of Health Data and the Sharer's Dilemma," *Digital Culture & Society*, 2 (1) : 123–142.
Kittler, Friedrich (1993), "Vorwort," in Friedrich Kittler, *Draculas Vermächtnis: Technische Schriften*, 8–10, Leipzig: Reclam.
Kurz, Robert (1999), *Schwarzbuch Kapitalismus: Ein Abgesang auf die Marktwirtschaft*, Frankfurt am Main: Eichborn.
Kurz, Robert (2004), "Subjektlose Herrschaft: Zur Überwindung einer verkürzten Gesellschaftskritik," in Robert Kurz, *Blutige Herrschaft: Essays zur emanzipatorischen Kritik der kapitalistischen Moderne und ihrer westlichen Werte*, 153–222, Bad Honnef: Horlemann.
Kurz, Robert (2012), *Geld ohne Wert: Grundrisse zu einer Transformation der Kritik der politischen Ökonomie*, Bad Honnef: Horlemann.
Lange, Oskar, (1972), "The Computer and the Market," in Alec Nove (ed.), *Socialist Economics: Selected Readings*, 401–405, Harmondsworth: Penguin.
Lavoie, Don (1990), "Computation, Incentives, and Discovery: The Cognitive Function of Markets in Market Socialism," *The ANNALS of the AAPSS*, 507 (1): 72–79.
Le Goff, Jacques (2012), *Money and the Middle Ages*, trans. Jean Birrell, Cambridge: Polity Press.
Licklider, J. C. R., and Robert Taylor (1968), "The Computer as a Communication Device," *Science and Technology,* 76: 21–41.

Lohoff, Ernst (2007), "Der Wert des Wissens: Grundlagen einer Politischen Ökonomie des Informationskapitalismus," *Krisis*, 31. Available online: http://www.krisis.org/2007/der-wert-des-wissens/ (accessed January 9, 2017).

Lohoff, Ernst, and Norbert Trenkle (2012), *Die große Entwertung: Warum Spekulation und Staatsverschuldung nicht die Ursache der Krise sind*, Münster: Unrast.

Lomas, Natasha (2014), "Amazon Patents 'Anticipatory' Shipping—To Start Sending Stuff Before You've Bought It," *TechCrunch*, January 18. Available online: http://techcrunch.com/2014/01/18/amazon-pre-ships/ (accessed January 3, 2017).

Lupton, Deborah (2016a), *The Quantified Self: A Sociology of Self-Tracking Cultures*, Cambridge: Polity.

Lupton, Deborah (2016b), "The Diverse Domains of Quantified Selves: Self-Tracking Modes and Dataveillance," *Economy and Society*, 45 (1): 101–122.

Meretz, Stefan (2007), "Der Kampf um die Warenform," *Krisis*, 31. Available online: http://www.krisis.org/2007/der-kampf-um-die-warenform/ (accessed January 9, 2017).

Marx, Karl (1970), *A Contribution to the Critique of Political Economy*, trans. S. W. Ryazanskaya, ed. Maurice Dobb, New York: International Publishers.

Marx, Karl (1976), *Capital: A Critique of Political Economy*, vol. 1, trans. Ben Fowkes, London: Penguin/New Left Books.

Nonaka, Ikujirō, and Hirotaka Takeuchi (1995), *The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation*, New York: Oxford University Press.

Oguz, Fuat (2010), "Hayek on Tacit Knowledge," *Journal of Institutional Economics*, 6 (2): 145–165.

O'Neill, John (1996), "Who Won the Socialist Calculation Debate?," *History of Political Thought*, 17 (3): 431–442.

O'Neill, John (1999), "Socialism, Ecology and Austrian Economics," in Elisabeth Nemeth and Richard Heinrich in collaboration with Antonia Soulez (eds.), *Otto Neurath: Rationalität, Planung, Vielfalt*, 123–145, Vienna: Oldenbourg and Berlin: Akademie-Verlag.

Ortlieb, Peter Claus (2014), "Bitte ein Bitcoin: Digitale Währungen geben Auskunft über die Abkopplung der Finanzmärkte von der Realökonomie," *Konkret*, 11/13. Available online: http://www.konkret-magazin.de/hefte/heftarchiv/id-2014/heft-32014/articles/bitte-ein-bitcoin-1291.html (accessed January 9, 2017).

Ostrom, Elinor (1999), *Die Verfassung der Allmende*, trans. Ekkehard Schöller, Tübingen: Mohr Siebeck.

Pentland, Alex (2012), "Society's Nervous System: Building Effective Government, Energy, and Public Health Systems," *Computer*, 45 (1): 39–46.

Peters, Arno (2000), *Computer-Sozialismus: Gespräche mit Konrad Zuse*, Berlin: Neues Leben.

Pircher, Wolfgang (1999), "Der Krieg der Vernunft: Bemerkungen zur 'Kriegswirtschaftslehre' von Otto Neurath," in Elisabeth Nemeth and Richard Heinrich in collaboration with Antonia Soulez (eds.), *Otto Neurath: Rationalität, Planung, Vielfalt*, 96–122, Vienna: Oldenbourg and Berlin: Akademie-Verlag.

Quantified Self (n.d.), "Selbstvermessung, Daten & Optimierung." Available online: http://was-ist-quantified-self.de (accessed June 2, 2016).

Schaupp, Simon (2016a), *Digitale Selbstüberwachung: Self-Tracking im kybernetischen Kapitalismus*, Heidelberg: Verlag Graswurzelrevolution.

Schaupp, Simon (2016b), "Wir nennen es flexible Selbstkontrolle: Self-Tracking als Selbsttechnologie im kybernetischen Kapitalismus," in Stefanie Duttweiler, Robert Gugutzer, Jan-Hendrik Passoth, and Jörg Strübing (eds.), *Leben nach Zahlen: Self-Tracking als Optimierungsprojekt?*, 63–86, Bielefeld: transcript Verlag.

Schröter, Jens (forthcoming), "Digitale (Medien-)Technologien und das Verschwinden der Arbeit: Ein Literaturbericht," in Thomas Bächle and Caja Thimm (eds.), *Die Maschine: Freund oder Feind?*, Wiesbaden: VS Verlag.

Schröter, Welf (2016), "Virtuelle Identitäten im 'Worklogging': Impulse zur sozialen Gestaltung der Arbeitswelt in der 'Industrie 4.0'," in Stefan Selke (ed.), *Lifelogging: Digitale Selbstvermessung und Lebensprotokollierung zwischen disruptiver Technologie und kulturellem Wandel*, 193–214, Wiesbaden: Springer.

Schüttpelz, Erhard, and Sebastian Gießmann (2015), "Medien der Kooperation: Überlegungen zum Forschungsstand," in *Navigationen*, 15 (1): 7–55.

Vanberg, Victor (1994), "Hayek's Legacy and the Future of Liberal Thought: Rational Liberalism versus Evolutionary Agnosticism," *Cato Journal*, 14 (2): 179–199.

Vaughn, Karen (1980), "Economic Calculation Under Socialism: The Austrian Contribution," *Economic Inquiry*, 18 (4): 535–554.

Winkler, Hartmut (2004), *Diskursökonomie: Versuch über die innere Ökonomie der Medien*, Frankfurt am Main: Suhrkamp.

Afterword

Anitra Nelson

The idea of a society without money lights a fuse: people immediately respond: "Wonderful!" "A return to the Dark Ages?" "But, money is crucial for organizing societies." "Of course, money will disappear of its own accord in post-capitalism." "There's nothing wrong with money, just capitalism." Even in a collection such as this, where money is examined in critical ways, loaded assumptions inviting justification and elaboration lie below the surface. Accordingly, it presents as a series of speculative, propositional and discursive chapters interspersed with lively conversations exposing underground cleavages.

Only a few traditional or contemporary movements, such as the heterogeneous non-market socialists (Rubel and Crump 1987; Nelson and Timmerman 2011) and eco-feminists (Habermann this volume), explicitly identify ending monetary values and relationships in their revolutionary agenda. At least implicitly, numerous struggles by Indigenous peoples veer in this direction (Salleh 2011; Galeano 1991). These movements have deep critiques of capitalism, a system that operates on the basis of "exchange value." Monetary or market-based exchange values (prices) dominate, contort and marginalize the real "use values," the purposes, qualities or uses of things.

The exchange of so-called equivalents—an obscure "equivalence" created abstractly in market exchange of a product or service for money—defines the commodity simply in terms of social wealth thus eliminating any sense of the use value either of the commodity or the labor that created it. In advanced capitalism economic assessments typically determine decision-making. Monetary logic and prices even enter "social" and "environmental" evaluations, especially via budgetary and indicative accounting or cost-benefit analyses. The use values of people's skills, talents and knowledge, the use values of earth and its bounty, and the use values of things that are traded are obscured when the world is perceived and managed via exchange values, specifically monetary calculations, which dominate producers and production, consumers and consumption today.

Revolutionary parties and societies of actually-existing communisms of the twentieth century focused on wresting control of the state, even if as a

first stage of transformation beyond both money and the state. Although discussions of monetary substitutes and moneyless forms of calculations ensued, any movements in these directions were reversed and the market retained, although regulated and controlled in ways antithetic to private capitalist production for trade. Still the paralysis within which such revolutions froze—and became subject to counter-revolutionary internal elites and oppositional capitalist logic—can be read as an inevitable result of the retention of monetary relations and values (Nelson 2011). Even post-growth movements, such as those calling for a steady state economy or degrowth—specifically those movements who one might imagine would appreciate the significantly negative implications of monetary values and relationships for environmental sustainability and social justice—tend to see money as malleable to their cause. In short, they veer towards alternative currencies and monetary reforms rather than advocate replacing the entire realm of exchange value by direct control of production and exchange using the transparent lens of use values (exceptions include degrowth proponents Exner (2014) and Nelson (2016)). Elsewhere I have shown how growth is a necessary aspect of capitalism and significant to overcome key weaknesses associated with production for trade (Nelson 2016).

Primary detractors of money focus on the highly political and systemic role of monetary values and relationships, attacking money root and branch because of its critical roles in operating a social system that is socially unfair, exploitative, unjust and environmentally destructive. Secondary detractors include those prominent in this volume, such as Aigner and Scholz-Wäckerle, and Heidenreich, who wish to substitute production and exchange based on a monetary system with a form of artificial, super-human intelligence or algorithm.

Secondary detractors find the money system weak and inadequate operationally but, arguably, fall short of returning production and exchange to human control in socially disbursed and transparent ways. As such, they might even be categorized as the most sophisticated in a line of monetary reformists rather than holding hands with revolutionaries—who prefer to perceive the world in terms of use values, social and environmental needs and their satisfaction, and direct democracy. Only in as much as sophisticated calculators can ease a decision-making process based on broad consensus and omnipotent use values might their originators fall into this radical camp.

If this distinction between primary and secondary detractors is not immediately clear, an aim of this Afterword is to make it so—serving to broaden the bases of debates in future research in this potent and increasingly relevant area of study. In a subterranean way, non-monetary perspectives have gained increasing relevance as high tech capitalist societies initiated an

era in which humans have become a fatally parasitical species on earth. This means that our central challenge today is to create the principles and models for human, and humane, societies that live off and from earth in symbiotic, rather than parasitic, ways.

Supreme Unit of Account and Standard of Value

Currently, seemingly insurmountable barriers to establishing fair and sustainable societies are erected by everyday capitalist activities. Neither the capitalist system nor the peculiar development of capitalist technologies are explicable without understanding the dominating logic of monetary relationships and the all-pervading character of exchange value, of money. After all, the entire mode of production focuses on production for trade, for money, a mystically obscure abstraction: thus, money's similarity with a god, and capitalist economics with religious dogma (Nelson [1999] 2014).

Following their disciplinary and research interests, more contributors to this book examine money as a medium of exchange than as a "universal equivalent," i.e. a unit of account and standard of value. This emphasis on the medium or mediator directs us to fairly technical distributive and redistributive foci, fortunately not taking us too far in a digital currency direction. Nevertheless, high tech matching and algorithm approaches (Heidenreich this volume) ensue, along with emphases on comparison and replacement, as with Meretz's "stigmergic mediation." A typically reductionist result of a narrow medium and information technology approach is humorously pointed out by Schlemm (this volume): a simplistic victory over the rich in Daniel Suarez's plot for *Freedom*™ (2010: 381) is achieved when they are "ousted by deleting the data proving their wealth: 'Money, after all, is just data, and yours has been erased.'"

In contrast, I stand with those who propose that money's unique and all-pervading function is that of universal unit of account, a dictatorial standard of value, a kind of hub from which all the main spokes of capitalism rotate. As Lohoff (this volume) writes, following Marx: "Money gives the exchange-value side of particular commodities a form that is separate from their specific use values; it allows exchange value to face the world of commodities as a power unto itself." Similarly, Heitmann (this volume) points to the force and violence of money, also highlighted in Aglietta and Orléan (1984), in contrast to the voluntary and harmonious characterization by Siefkes (in Habermann, Meretz, and Siefkes this volume). Indeed, Siefkes (this volume) seeks a simple substitute for the "common denominator." Although money as we know it is, in this respect, a fallacious pretender—the substitution

route highlights Siefkes' convictions that a money-like measure and relationships are necessary, and that markets can arise spontaneously in favorable circumstances without necessarily involving capitalists.

Reflecting an arrogant trade-dominated worldview, we readily homogenize various other types of societies in terms of our exchange-form "other," i.e. as "non-monetary economies." Moreover, non-monetary economies are frequently used as a synonym for "subsistence." Perhaps, instead, we should refer to the heterogeneity of economies in which money has no place as "use value economies"—highlighting their social and environmental *use-fullness*. As Heitmann (this volume) points out, subsisters proudly struggle against monetary practices, not as mere victims, but as a rich bed from which we can develop utopian non-monetary economies. Still, eschewing money is only a *necessary*, not a *sufficient* ground for use value economies to flourish. As Meretz (this volume) points out: "what is at issue is an entirely new mode of reproduction, in which money can no longer have any societal function."

People Power and Planetary Use Values

My perspective incorporates two axes, a political and socio-cultural one centering on principles and practices of power and control amongst people, and a material axis focusing on ways we can live in balance with nature, specifically addressing the immediate challenge of living within, indeed enhancing, the regenerative processes of earth. What is human beings most significant and urgent challenge right now? We have been in "ecological overshoot" since the 1970s; we have been using, wasting and damaging more resources and energy than earth has the capacity to regenerate. In 2018, Earth Overshoot Day falls on August 1 for humanity as a whole. If everyone had consumed at the level of the average United States resident, that date would have been March 15, for an Australian (like myself) that day was March 31, while the rate of the average German took them to May 2 (Global Footprint Network 2018).

We can quibble about ways of measuring our environmental impacts that arrive at those dates, just as we argue over methods of evaluating and estimating carbon emissions, but the general thrust and implications of such ecologically destructive facts remain obdurate. Capitalism promotes growth. Capitalists use money to make more money, in processes with significant implications for the quality and quantity of those use values that we need in order to live. Clearly we need an alternative mode of production that promotes, instead, modest consumption, thereby matching our interests in

contributing to life on earth with securing basic needs and ensuring enjoyment of people and nature. A grassroots approach is the soundest way to institute such change with the necessary haste.

So, what might such a world look like? How might it operate? A sketch of such a world, drawing generically on my previous work, elaborates on an alternative defined by Schröter (this volume) whereby: "People agree on what is to be produced, divide up the work, make the products, and distribute them according to the democratic decisions made at the outset."

One ecosocialist route would initially marginalize and ultimately dissolve the state and money to vest control on the basis of subsidiarity, with sub-sub-bioregional neighborhood precincts evolving as centers of economic and political power ("bioregional" meaning a landscape defined by the natural environment, such as topography and species, with sub-bioregions as sub-components). In other words, people re-inhabit earth on the bases of its natural abundance for human subsistence. Such cell-like neighborhood precincts would exercise a high degree of autonomy, diversity and democracy while abiding by universal principles, namely the satisfaction of the basic needs of all within the regenerative potential of the planet.

Members of these neighborhoods would create and re-create the highest degree of collective sufficiency achievable within the area over which they had use rights (a commons). Simultaneously, they could make formal arrangements (or "compacts," rather than contracts) with direct and further flung neighborhoods to receive and give certain necessities not locally obtainable. Other arrangements would cover collective regional working groups managing extensive, commonly-held and co-managed, resources—say, based on lakes and mountain ranges, and industrial or expert care nodes—cutting across and incorporating neighborhood precincts within discrete levels of management. Planetary sharing of cultural, creative, and intellectual activities would flourish. Thus, highly collectively sufficient, neighborhoods would incorporate intersecting nodes, networked horizontally within and across regions, all operating on consensual decision-making (Nelson 2016).

I have argued that all these developments are already occurring by ways of "green materialist" anti-capitalist movements burgeoning in the twenty-first century (Nelson 2015), such as the commons movement referred to by Habermann, Meretz, and others, in this volume. Meretz, for instance, discusses how the negotiated "mediation" of commoners collectively making decisions before production has a "structurally *precautionary* character" in contrast to the weak "*remedial*" character of production for trade via monetary exchange, as producers are obliged to act on inferences of market trends.

Principles

Members of the kind of moneyless society sketched above would be socially obliged to others and earth to achieve the necessarily balanced and self-reproducing relationships envisaged: relationships respecting the diverse multiplicity of use values of humans and nature. Again, this is already happening. For instance, in a work on eco-collaborative housing, I show how the most advanced, promising and successful examples of shared living and working on the basis of a one planet footprint rely on sophisticated, intense and direct co-governance (Nelson 2018: 214–237). Socio-cultural techniques of decision-making together, sharing responsibility for one-another's needs, and benefiting from what Eduardo Galeano (1991) has referred to as a "community-based mode of production" are all incompatible with, and I argue superior to, a monetary economy. Locals work in a known locale with social and environmental specificities and distinctions. Locals are best placed to monitor progress and identify challenges, to absorb and disseminate techniques, skills and knowledge.

We know that we need to design our global–local society so that products are harvested or made as close as possible to where they will be consumed. Moreover, decision-making focuses on biophysical, environmental and social measures and use values. Furthermore:

> future distribution is decided simultaneously with collectively agreeing on productive goals and ways of achieving them. Say, each person contributes X hours per week to collective production as a community obligation and, in return, has their basic needs met. Each household guesstimates their basic needs, say annually, while working groups report on the capacity of the local area and capability of locals to fulfill various needs. Once this system is established, planning mainly relies on updating previous calculations and taking account of seasonal, natural [and demographic] factors. There is similar communication and negotiation on goods and services which rely on produce from neighboring or more distant communities. Essentially the plan for production is collectively formed, building in avenues for end-point distribution; we are producing corn, apples, solar electricity, potable water and towels for particular, already identified householders.
>
> Nelson 2016: 17–18

Material, energy and human outlays are minimal in production-to-order that, nevertheless, includes some extra production to cover unexpected developments through and after production and a minimum of goods to store as necessary for security in basic needs.

Here "social efficiency" stands for producing what the community envisages it will need in ways that the community determines most feasible and appropriate, when and where the community thinks best. Algorithmic matching (Heidenreich this volume) is unnecessary if producing to order (*ex ante* versus *ex post*) under genuine community control; calculative apparatus can only ever provide technical supports as the community deems necessary. Appropriate technology—a "multi-tech perspective" in Heitmann this volume—is the ideal, with people decision-making on the bases of use values of labor, land and needs of people and planet. Thus, we the people coordinate, neither money nor a money substitute as the likes of Hayek have speculated is necessary (Kathöfer and Schröter this volume), versus Otto Neurath, who "advocated economic decisions founded on *in natura* calculation in kind" (O'Neill 2011: 72).

In 2012, I lived and worked at Twin Oaks (Virginia, United States) and have referred to it as an example of a comparatively non-monetary community. This was not an aim of Twin Oaks but seemed, rather, to evolve in the process of achieving a serious level of co-governance and collective autonomy from mainstream pressures (read social insecurity, poverty, cultural intolerance—not to be confused with isolationism). Thus, I find the characterization of Twin Oaks by Heitmann (this volume) curious, especially the claim that "even 'intrinsic motivation' is sometimes limited" and their planning process "non-democratic." I found decision-making and conflict-resolution processes transparent and sophisticated. Privacy, individualism and diversity were respected. Members were warm, tolerant hosts whereas I have found the practice of "solidarity between strangers" lacking in mainstream cities where refugees, migrants, women, the poor, indeed anyone vaguely "different" can become social victims.

Indeed, I would contend that Twin Oaks conforms more to Heitmann's alternative descriptors of "post-industrial flexible and multi-technological division of labor" models, starting with voluntary cooperation and ending with "openness" to assessing needs, technologies and techniques. Twin Oaks is a real, holistic, practical example of residents voluntarily fulfilling obligations, negotiating the character and pace of such obligations, simultaneously taking account of the global sustainability and social challenges that we face. Moreover, housework and care work are integrated into communal work, thus breaking through the "systematic tendency to overlook reproductive or care activities, and therefore the prerequisites for what is generally understood as the 'economy'" in many alternative solidarity economy models (Habermann, this volume). Twin Oaks did not appear low-tech; instead, within a limited suite of choices, "appropriate" technology even approximated a "multi-tech commons." I worked in their

tofu making factory; they use solar panels, computers, internet, and mobile phones.

Technology

Technology arises in approaches to money or moneylessness in many and various ways. For instance, Siefkes (this volume) mainly approaches money as a tool, even compares it to the automobile, and seems to reduce its functions to a medium of exchange. Nevertheless, he distrusts algorithmic approaches, essentially for political reasons: "the distribution algorithms in such a society would have power which even dictators could only dream of." Similarly, in her review of non-monetary futures in utopian literature and science fiction, Schlemm (this volume) refers to the realization of such fears in *Accelerando* (2005) by Charles Stross where a system of algorithms allocates resources: "This system is called 'Economics 2.0', with the '2.0' standing for interactions which humans cannot understand."

Aigner and Scholz-Wäckerle (this volume) sketch out the challenge of planetary computation for existing economic and political structures, with a "platform of platforms" integrating a digital currency. Such scenarios seem to reflect—rather than more deeply examine—the practices and ideology of capitalist technology regarding labor time and money, and the socio-political meanings and implications of so-called "greater productivity." In contrast, the technological focus of Fleissner (this volume) highlights how capitalism has always promoted the development of machine forces, expanding the mystifying and fetishizing power of capital(ists) and diminishing labor/workers in the process (see too Braverman [1974] 1998). With a more humane, ecology-centered approach we could develop more complementary technology to fulfill ourselves as human beings—rather than being told robots are more useful than us—and to heal earth with, for instance, organic methods and biomimicry principles. Workers "and consumers/users" thoughts, feelings and conditions are jeopardized by capitalists' narrow definition of efficiency based on the monetary costs of production.

Although Heitmann's "having much and doing little" money-free utopias and associated guaranteed unconditional minimum income schemes (as in Aufderheide-Kohl, Aigner and Scholz-Wäckerle, and Fleissner this volume) are popular, they float curiously above the material world, seemingly ignoring the urgency of natural regeneration and healing given the very real, and overstepped, limits to earth's bounty. One problem with forecasting the superfluity of labor is the tendency to simply project this single factor of a society based on private property, trade, and production for trade without

regard for changes in other factors. The history of capitalism shows a political tendency to both rapaciously find uses for labor in ever-expanding endeavors and to regard the unemployed with complacency and blame.

A similarly narrow focus characterizes treatment of "information products." Siefkes (this volume) fails to acknowledge their similarity with a history of intellectual and creative processes and products which always bamboozled analysts and practitioners in as much as they have been packaged as commodities. Even the "do-ocracy" of recent movements, such as open-source software, existed in a plethora of endeavors throughout history. So often "progress" has been achieved despite capitalism not because of it, with free gifts of labor and more from inventors, discoverers and artists of all kinds. Indeed, while Marxist Fleissner (this volume) argues that commodities and money will be fatally disrupted by forthcoming technological developments, and Aufderheide-Kohl (this volume) sees "the collapse of monetary systems in all historical cycles merely a matter of time," the irrationalities of monetary and financial spheres have attended the entire, triumphant history of capitalism.

There are various questions for technological utopians. How do the "nuts and bolts" of automation fare as environmental costs? Who makes, monitors and fixes robots? Or, if they care and regenerate themselves, how do we relate to robots, and robots to us? Will our quests for direct democracy and autonomy result, instead, in the creation of an autonomous set of things or beings on which we depend for our existence? How will automation dissolve the Global North and Global South divide, and inequities more generally? How can automated work bear and bring up children who/which we might call "human"? Like Habermann (this volume) I am convinced that people, not technology, have the greatest potential to overthrow this system, which is—after all—of our own making. *We* need to decide on techniques and technologies that *we* think are appropriate even if as, say in my utopian sketch above, each locale opts for distinctly different types and combinations.

Conclusion

This output of the Society After Money project centered on the University of Bonn and funded by the Volkswagen Foundation has fruitfully drawn on scholars from a range of fields, such as heterodox economics, sociology, eco-feminism and commons, cultural, media, political and philosophical studies—to light a further fire in a very timely debate not only on the future of money but also of humanity.

References

Aglietta, M., and A. Orléan (1984), *La Violence de la Monnaie*, Paris: Presses Universitaires de France.

Braverman, H. ([1974] 1998), *Labor and Monopoly Capital: The Degradation of Work in the Twentieth Century*, New York: Monthly Review Press.

Exner, A. (2014), "Degrowth and Demonetization: On the Limits of a Non-Capitalist Market Economy," *Capitalism Nature Socialism,* 25 (3): 9–27.

Galeano, E. (1991), "The Blue Tiger and the Promised Land," *NACLA Report on the Americas,* XXIV (5): 13–17.

Global Footprint Network (2018), "August 1 is Earth Overshoot Day." Available online: https://www.footprintnetwork.org/ (accessed July 18, 2018).

Nelson, A. ([1999] 2014), *Marx's Concept of Money: The God of Commodities*, London: Routledge.

Nelson, A. (2011), "Money v. Socialism," in A. Nelson and F. Timmerman (eds.), *Life Without Money: Building Fair and Sustainable Economies*, London: Pluto Press.

Nelson, A. (2015), "New and Green Materialism," *Progress in Political Economy*, 29 July. Available online: http://ppesydney.net/new-and-green-materialism (accessed July 18, 2018).

Nelson, A. (2016), "'Your Money or Your Life': Money and Socialist Transformation," *Capitalism Nature Socialism,* 27 (4): 40–60.

Nelson, A. (2018), "The Political Economy of Space and Time in Eduardo Galeano," *Progress in Political Economy*, 20 February. Available online: http://ppesydney.net/political-economy-space-time-eduardo-galeano/ (accessed July 18, 2018).

Nelson, A., and F. Timmerman, eds. (2011), *Life Without Money: Building Fair and Sustainable Economies*, London: Pluto Press.

O'Neill, J. (2011), "Money, Markets and Ecology," in A. Nelson and F. Timmerman (eds.), *Life Without Money: Building Fair and Sustainable Economies*, London: Pluto Press.

Rubel, M., and J. Crump, eds. (1987), *Non-Market Socialism in the Nineteenth and Twentieth Centuries*, Houndmills: Macmillan.

Salleh, A. (2011), "The Value of a Synergistic Economy," in A. Nelson and F. Timmerman (eds.), *Life Without Money: Building Fair and Sustainable Economies*, London: Pluto Press.

Contributors

Ernest Aigner, MSc, is a university assistant prae doc at the Institute for Ecological Economics at the Vienna University of Economics and Business. He received his Master's degree in Socio-Ecological Economics and Policy from the Vienna University of Economics and Business. He researches work in Ecological Economics, Economic Sociology and Pluralism in Economics, and Monetary Systems.

Tobias Aufderheide-Kohl, Dr. His latest publications include *Geld und Gesellschaft: Zu Entstehung, Funktionsweise und Kollaps von monetären Mechanismen, Zivilisation und sozialen Strukturen*, Marburg: Metropolis 2014.

Peter Karl Fleissner, Prof. Dr, is a retired University Professor and engineer from the Vienna University of Technology. His research ranges across Social Cybernetics, Mathematical Simulation Models, Theory of Value and Technology Design. His latest publications include *Peter Fleissners Abecedarium: Essays über Arbeit, Banken, Demokratie, Europa, Politische Ökonomie, Religion, Utopie und Zukunft*, Edition Volksstimme, Wien: Globus 2015; "Die Rolle der Werttheorie in einer Übergangsgesellschaft", in: Marxistische Abendschule Hamburg (Hg.): *Aufhebung des Kapitalismus—Die Ökonomie einer Übergangsgesellschaft*, Argument Sonderband Neue Folge 319, Hamburg: Argument Verlag 2015, S. 74–92.

Friederike Habermann, Dr, is an economist, historian and freelance scientist. Her research interests include Economic Critique and Non-capitalist Alternatives, Intersectionality and Global Social Movements. Her latest publications include *Ecommony: UmCare zum Miteinander*, Sulzbach: Ulrike-Helmer-Verlag 2016.

Stefan Heidenreich is living in Berlin; he is an author in the fields of Art History and Media Studies. He worked at the University of Cologne, the Art Academy in Düsseldorf, Leuphana University Lüneburg, Art School Kassel, University Basel and ETH Zurich. He researches on Media, Economy and Art.

Lars Heitmann is a political scientist and was a research fellow in the "Project Society After Money" from 2016 to 2017. His research concerns the Theory of the State and Social Theory, Theory and Practice of Social Movements, and Sociology of Culture. He takes part in various activities in university research and teaching and in association with social movements.

Jasmin Kathöfer, MA, is a PhD student in the graduate programme "Das fotografische Dispositiv" at the Braunschweig University of Art (HBK) with the subject "Spurbildende Medien. Eine andere Mediengeschichte von Index und Spur" (working title) since October 2016. She received her degrees from the University of Siegen (Literatur Kultur Medien und Kunstgeschichte BA, Medienkultur MA). From October 2015 to May 2016 she took over teaching assignments at the Professional School of the Middle Class (FHM) Cologne and since April 2018 she has teaching assignments at the Braunschweig University of Art (HBK). Since January 2016 she has been a research fellow in the "Project Society After Money" (University of Bonn).

Ernst Lohoff is a freelance publicist and editor of the socio-critical journal *Krisis*. His field of research includes Critique of Political Economics.

Stefan Meretz, Dr, is an engineer and computer scientist and the co-founder of the Commons-Institute. His research is concerned with Commons, Technology Development, and Critical Psychology. His latest publication (with Simon Sutterlütti) is *Kapitalismus aufheben. Eine Einladung, über Utopie und Transformation neu nachzudenken* (Hamburg: VSA 2018).

Anitra Nelson is an Honorary Associate Professor at the Center for Urban Research, RMIT University in Melbourne, Australia. Her relevant work focuses on Theories of Money and Non-monetary Economies, such as *Marx's Concept of Money: The God of Commodities* (London: Routledge [1999] 2014); and *Life Without Money: Building Fair and Sustainable Economies* (London: Pluto Press 2011). Anitra completed *Small is Necesssary: Shared Living on a Shared Planet* (London: Pluto Press 2018) as a Senior Fellow at the Rachel Carson Center for Environment and Society at the Ludwig-Maximilians University, Munich (2016 to 2017)—https://anitranelson.info/.

Hanno Pahl, Dr, is a research fellow in the project "Vom Modell zur Steuerung—Der Einfluss der Wirtschaftswissenschaften auf die politische Gestaltung der Finanzmärkte durch Zentralbanken" of the Federal Ministry of Education and Research at the Ludwig-Maximilians-Universität München. His latest publications include *Genese, Konsolidierung und Transformation der neoklassischen Wissenschaftskultur. Zur Konturierung einer Soziologie der Wirtschaftswissenschaften* (Wiesbaden: Springer VS 2018).

Annette Schlemm, Dr, is a physicist and philosopher. Her research focuses on Philosophical Dialectics, Critical Social Science and the Future and Climate Change. Her publications include amongst others the keywords "Dialektik",

"Subjekt-Objekt" and "Prozess" in *Bloch-Wörterbuch. Leitbegriffe der Philosophie Ernst Blochs* (Berlin, Boston: De Gruyter 2012).

Manuel Scholz-Wäckerle, Dr, is a senior lecturer at the Department Socioeconomics of the Vienna University of Economics and Business. His research ranges across Evolutionary Political Economy, Institutional Economics, and Agent-Based Modeling (micro-meso-macro).

Jens Schröter, Prof. Dr, chair for Media Studies at the University of Bonn. His research includes Digital Media, Critical Media Theory, and 3D Images. Amongst his latest publications is *3D: History, Theory and Aesthetics of the Technical-transplane Image* (New York: Bloomsbury 2014—https://www.medienkulturwissenschaft-bonn.de/).

Christian Siefkes, Dr, is a freelance software designer and commons researcher. From 2016 to 2017 he was a research fellow for the "Project Society After Money" (University of Bonn). He is the co-author of the joint blog keimform.de on the emancipatory potential of free software and other forms of commons-based peer production. His research is concerned with commons, peer production, free software and free culture, open source software and hardware, critical social studies, and critique of capitalism. His publications include *From Exchange to Contributions* (Berlin 2008); "Eine Welt, in der alle gut leben können", in: Andrea Baier et al. (eds.), *Die Welt reparieren* (Bielefeld: Transcript Verlag 2016); "Freie Software und Commons," in *Navigationen* 2/2016, (Siegen; universi 2016); "The Boom of Commons-Based Peer Production," in: David Bollier and Silke Helfrich (eds.), *The Wealth of the Commons* (Amherst, MA: Levellers Press 2012).

Index