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Heterogeneity and uniformity in the evidential domain

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by

Natalia Korotkova

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Abstract of the Dissertation

Heterogeneity and uniformity in the evidential domain

by

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University of California, Los Angeles, 2016
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The dissertation is devoted to the formal mechanisms that govern the use of evidentials, expressions of natural language that denote the source of information for the proposition conveyed by a sentence. Specifically, I am concerned with putative cases of semantic variation in evidentiality and with its previously unnoticed semantic uniformity.

An ongoing debate in this area concerns the relation between evidentiality and epistemic modality. According to one line of research, all evidentials are garden variety epistemic modals. According to another, evidentials across languages fall into two semantic classes: (i) modal evidentials; and (ii) illocutionary evidentials, which deal with the structure of speech acts. The dissertation provides a long-overdue discussion of analytical options proposed for evidentials, and shows that the debate is lacking formally-explicit tools that would differentiate between the two classes. Current theories, even though motivated by superficially different data, make in fact very similar predictions. I reduce the cases of apparent semantic variation to factors independent from evidentiality, such as the syntax of clausal complementation, and show that these cases do not resolve the modal-illocutionary debate. I further propose novel empirical diagnostics that would identify modal-hood and speech-act-hood.

I then turn to the many traits that evidentials within and across languages have in common. I argue that evidentials belong to the class of subjective expressions, along with first-person pain and attitude reports, and attribute to them a unified semantics of first-person mental states. The subjectivity of evidentials is contributed by two components: (i) the first-person component that is part of the conventional meaning of evidentials, analyzed as indexicality; and (ii) the

mental state component that is rooted in the properties of cognitive processes described by evidentials (and other subjective expressions), such as perception and introspection.

I show that the subjectivity of evidentials restricts their behavior across a range of environments in a uniform way. In dialogues, subjectivity accounts for the resistance to direct denials, a property known as non-challengeability and previously seen as supporting the not-at-issue analysis of evidentiality. In attitude reports, subjectivity disallows ascribing evidence to a third party and bans evidentials from amnesiac scenarios, used in the literature on attitudes as a litmus test for 'de se'. In information-seeking questions, subjectivity creates an effect of obligatory shift to the addressee because it is incompatible with speaker-oriented interpretations wherein the speaker does not have access to their own epistemic state. I further show that evidentials may be speaker-oriented in non-canonical questions. That evidentials shift has been previously hardwired to their syntax and/or semantics, which fails to explain the lack of shift in non-canonical questions.

If language is in some ways a window on the mind, evidentiality is a natural meeting point for several areas, including at least linguistics, philosophy of language, philosophy of mind, and epistemology. But so far, expressions of evidentiality have been studied in-depth almost exclusively within formal semantics. Current linguistic theories of evidentiality are disconnected from theories of knowledge and models of reasoning. By deriving the linguistic behavior of evidentials from non-linguistic properties of experiences they describe, this dissertation makes a necessary first step towards filling this gap.

The dissertation of Natalia Korotkova is approved.

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For Yakov Testelets

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1,2,3 person
ABL ablative
ABS absolutive
ACC accusative
ADD additive
ADV adverbial
AOR aorist
BPG best possible grounds evidential
CNJ conjunct
COMP complementizer
COND conditional
CONJ conjecture evidential
COP copula
DAT dative
DECL declarative
DEF definite
DIR direct evidential
DIRECT directive
EGO egophoric agreement
ERG ergative
F feminine
FUT future
GEN genitive
HAB habitual
ILLA illative
IMP imperative
INCL inclusive
IND indirect evidential
INDEF indefinite
INF infinitive
INFER inferential evidential
INSTR instrumental
IO indirect object
IPV imperfective
IRR irrealis
LAT lative
LK linker
LOC locative

MASC masculine
N neuter
NEG negation
NEGO non-egophoric agreement
NFUT non-future
NMLZ nominalization
NOM nominative
O object
OBL oblique
PL plural
POSS possessive
PP past participle
PREP preposition
PRES present
PROG progressive
PROSP prospective
PRTCL particle
PST past
PST1 past 1
PST2 past 2
PV perfective
Q question
QUOT quotative
REAS reasoning evidential
REFL reflexive
REM.PST remote past
REP reportative evidential
S subject
S.REL subject relativizer
SENS.EV non-visual sensory evidential
SG singular
SPEC.KNOWN specific known indefinite
SPEC.UNKNOWN specific unknown indefinite
SURP surprise
TOP topic
Y/N yes/no question
◊ possibility modal
□ necessity modal

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In a way, it takes a village to write a dissertation. While writing itself is unilateral, other essential components have a communal touch. It is a great pleasure to thank many people who have contributed to the existence and completion of this thesis.

This dissertation is a product of my time at UCLA, enriched by research stays at Institut Jean-Nicod and Carnegie Mellon. However, my linguistic career would not have been possible without the education and hands-on training I got back in Moscow at the Center for Linguistic Typology and during the fieldwork trips to Adyghea.

Two people take a special pride of place. Thanks to Yakov Testelets, who introduced me to so many things I cherish: syntax, universals, Caucasian languages, Georgian poetry. His style rubbed off on me at the very least in that the dissertation contains more questions than answers. And thanks to Barbara Partee, who, never on any committee of mine, has always been a mentor. I keep turning to her handouts when in need of a refresher on some semantic issue, and to her when in need of advice, whether on linguistics or on life.

Deep thanks go to my committee, which grew increasingly bigger along with the dissertation: Yael Sharvit, Dominique Sportiche, Pranav Anand, Roumi Pancheva, Tim Stowell. They all share a no non-sense approach to linguistics and have been supportive, curious and generous with their criticism and open-mindedness.

Yael has been in on the project even before it became a dissertation, and has been pivotal at every stage. She joined the department in my first year, and turned out to be a dream adviser, a role model, and a constant voice of reason who'd strive me to coherence, dissertation- and otherwise. As a person who once managed to head to an out-of-country conference without a document that would let me back in and who had said document brought by Yael, who fortunately attended the same conference, I can only hope that one day I will magically become as put-together as she is.

I knew the project would involve a fair bit of syntax, so Dominique appeared on the committee. On top of providing the input I was seeking, he would always challenge my assumptions about semantics and its interfaces, to my short-term annoyance and to the project's long-term benefit. His vision shaped this work in many ways.

One of my best academic decisions might have never happened if not for the UCLA bureaucracy. I needed an external member, and this Anand person—not that I had ever met him—seemed to fit the bill. Pranav has been fantastic in every capacity, including, but not limited to, as a committee member, a colleague and a collaborator. His contribution is on every page and beyond, which is perhaps unsurprising after hours on skype and in Stevenson 260. Besides, this way I had an excuse for regular pilgrimages up north, where I could engage with other semanticists from the Bay area while also enjoying its beauty.

Roumi is the first person to have ever looked at evidentiality through the lens of formal semantics. She has always been generous with her time as I have been discussing various ideas with her ever since I started working on the topic. I was glad when this relationship became official as she joined the committee. Her feedback was very valuable, especially due

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2013. How do you think? Apparent *wh*-scope marking in Russian. Talk presented at the workshop *"Parenthesis and ellipsis: Cross-linguistic and theoretical perspectives"* during the 35th annual meeting of German Linguistic Society (DGfS), University of Potsdam, March 2013.

2012. On alleged *wh*-scope marking in Russian. N. Arnett and R. Benett (Eds.), *Proceedings of West Coast Conference on Formal Linguistics 30*, 205–215.

2012. How perfect is the perfect of evidentiality: Evidence from Georgian. Talk presented at *The Nature of Evidentiality*, Leiden University, June 2012.

2012. Against partial *wh*-movement in Russian. Poster presented at *West Coast Conference on Formal Linguistics (WCCFL) 30*, UC Santa Cruz, April 2012.

INTRODUCTION

My Universe is my eyes and my ears. Everything else is hearsay.

The Restaurant at the End of the Universe
DOUGLAS ADAMS

I feel compelled to add *or so I've been told*. In Turkish we have a special tense that allows us to distinguish hearsay from what we've seen with our own eyes; when we are relating dreams, fairy tales, or past events we could not have witnessed, we use this tense. It is a useful distinction to make as we "remember" our earliest life experiences, our cradles, our baby carriages, our first steps, all as reported by our parents, stories to which we listen with the same rapt attention we might pay some brilliant tale of some other person. It's a sensation as sweet as seeing ourselves in our dreams, but we pay a heavy price for it. Once imprinted in our minds, other people's reports of what we've done end up mattering more than what we ourselves remember.

Istanbul: Memories and the City
ORHAN PAMUK

Evidentiality, broadly construed, is about how we know what we know and why we believe what we believe. It is a linguistic category denoting the source of information conveyed by a sentence. English can express information source lexically by e.g. adverbials, as in (1) below:

(1)   Threatened by climate change, Florida **reportedly** bans term 'climate change'.[1]

The sentence in (1) talks about the proposition 'Florida bans term *climate change*'. Following Murray (2010), I will refer to it as the *scope proposition* (also called the *embedded proposition* and the *prejacent* in the literature). In addition the sentence conveys, via the evidential adverbial *reportedly* the idea that the speaker does not have firsthand knowledge about the scope proposition but rather learned it via hearsay.

Many of the world's languages have designated grammatical means to talk about information source such as visual vs. non-visual perception, conjecture or hearsay. What are the formal mechanisms behind this? The subject of this dissertation is grammaticalized cousins of *reportedly* and the like. The dissertation is on semantics and pragmatics, draws on the ideas

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1. From *Washington Post*; https://goo.gl/XVx6JN.

from syntax, philosophy of language and philosophy of mind, and interconnects the following topics: attitude reports, context-sensitivity, implicit content, modality, perspective, speech acts.

I advocate a unified semantics for evidentials across languages wherein they belong to the class of subjective expressions, together with e.g. first-person pain reports *It hurts* and taste ascriptions *It smells good*. Such expressions describe cognitive processes that are inherently first-person, such as introspection, and are therefore constrained in their linguistic behavior. Specifically for evidentials, I argue that subjectivity restricts the range of their possible interpretations across a variety of environments, thus being the fundamental source of several properties, some of them previously viewed as unrelated and some not discussed before.

I argue that experiences described by evidentials (i) resist third-party assessment: no one but the experiencer knows what they experience, (ii) are incorrigible: others cannot felicitously correct the experiencer about what they experience, and (iii) are immune to error through misidentification: the experiencer always knows that it is them who experiences something. Because of this constellation of properties, evidentials (i) resist denials in a dialogues (Chapter 4), a property that has been consistently linked to the alleged secondary discourse status of the information they contribute, (ii) disallow readings in attitudes such that having evidence is ascribed by a third party (Chapter 5), and (iii) do not allow speaker-oriented readings in information-seeking questions (Chapter 8), a property that has been interpreted in the literature as though evidentials have to shift in questions, and thus has been built into their syntax and/or semantics.

Even though evidentiality has received a great deal of attention from semanticists in the recent decades, the topic of subjectivity has not been touched upon. The current discussion centers primarily around the relation between evidentiality and epistemic modality. There are two major families of approaches to the topic.

According to the first one (Faller 2007; Matthewson et al. 2007), which I will call the **dichotomy view**, evidentials fall into two semantic classes: (i) *modal evidentials*, which operate at the level of proposition, typically analyzed as a garden variety of epistemic modality ((Izvorski 1997) and much subsequent work), and (ii) *illocutionary evidentials*, which operate at the speech act level (Faller 2002; Murray 2010). Under this view, the cross-linguistic variation in evidentiality can be parameterized using this underlying semantic distinction.

According to the second view (Matthewson 2012), which I will call the **modal view**, *all* evidentials are modal. Under this view, the cross-linguistic variation is due to external factors.

The views outlined above are based largely on the behavior of evidentials in root clauses. Systematic examination of evidentials across languages in less-studied environments—attitudinal complements (Chapters 3, 5 and 7) and questions (§ 2.4.3 in Chapter 2; Chapter 8)—reveals that each of the views fails to predict the actual patterns of variation. Sometimes more variation is predicted than exists. Sometimes less.

One of the fundamental problems with the dichotomy view is that the existing variation is not uni-dimensional (Table 1.2). Another problem is that the seeming variation largely results from a conspiracy of the data and from subsequent misinterpretations thereof. In many cases it is not directly related to the semantics of evidentials. For instance, Chapter 3 scrutinizes a case of the apparent semantic variation, to re-analyze it as a case of variation in the syntax of clausal complementation and in the morpho-syntactic make-up of evidentials.

At first glance, the situation lends support to the modal view, which locates the variation elsewhere. However, although a unified semantics for evidentials is possible and even desirable, as I argue throughout the dissertation, there is no knock-down argument for a modal analysis against an illocutionary one (Chapter 2). This brings upfront the next fundamental problem that both the dichotomy and the modal views share.

There is no unequivocal definition of what counts as *modal*, and therefore what should be the benchmark to measure the hypothesized modal evidentials against. If understood semantically, modality is a multi-faceted category that encompasses many diverse phenomena (see e.g. Arregui, Salanova, and Rivero forth). As of now, it is not always clear what different expressions of modality have in common semantically which they do not share with other expressions not usually called modal (see discussion of assessment-sensitivity in Chapter 6). Alternatively, it is possible to come up with a syntactic definition of modality and limit the attention to one particular form, e.g. modal auxiliaries, and test whether evidentials behave exactly like them. But this path may lead to comparing apples to oranges: it is not obvious how the behavior of one particular manifestation of modality is informative about the connection between evidentiality and modality. Likewise, there is no positive definition of what counts as *illocutionary*, which we could apply to evidentials. Under some approaches, even epistemic modality deals with speech acts (cf. Lyons 1977a).

The subjective core that I argue all evidentials share is compatible with a modal or an illocutionary analysis, and I deliberately do not give a definitive answer as to which of the two is right. The two types of approach are currently not sufficiently different in terms of what they can handle and what they predict. To defend one of them it is essential, in the first place, to come up with better empirical diagnostics that would distinguish between the two classes. I show that the current debate does not offer such diagnostics and outline novel empirical tests.

Epistemic modality as a semantic category is characterized by assessment-sensitivity: even in root declarative clauses, epistemics may not be anchored to the speaker. I show in Chapter 6 that evidentials lack this property. This fact still leaves open other anatylical possibilities such that evidentials are treated as non-epistemic modals (cf. Faller 2011) or as indexical modals à la Papafragou (2006). However, it undermines the idea that epistemic modality and evidentiality are more or less the same (pace Bybee 1985; Palmer 1986; van der Auwera and Plungian 1998, and, more recently, Matthewson 2012).

An inherent property of speech acts is the presence of a discourse commitment, but coming up with scenarios that would diagnose it proved tricky. The case in point is imperatives (see discussion in § 2.5). One of the prominent analyses (Kaufmann 2012) treats them as deontic modals. Data from conditional imperatives and conditionalized deontic modal sentences (Lauer and Condoravdi 2016) show that only imperatives, but not deontic modals, require that the speaker endorse the embedded proposition, which may undermine the modal analysis of imperatives. Such data, once they become available for evidentials, will provide factual evidence for whether or not evidentials have to do with speech acts.

The dissertation is not an all-inclusive monograph: it is a research program on the cross-linguistic explorations of semantics and pragmatics of evidentiality. I use the available data and diagnostics, add a new angle of looking at the familiar problems, include novel data, and outline how to fill in the remaining gaps. With that in mind, let me start.

CHAPTER 1

Key facts and synopsis of the proposal

1.1 Kinds of source

Evidentiality is used to express an acquaintance relation between an individual and a particular situation, which is typically described as marking of the information source for the proposition expressed by a sentence; see Chafe and Nichols (1986); Willett (1988); Guentchéva (1996); Johanson and Utas (2000); Aikhenvald and Dixon (2003); Aikhenvald (2004); Diewald and Smirnova (2010); de Haan (2013b,a) among many others.

Three types of information source commonly signalled by evidential markers are exemplified below by the Cuzco Quechua evidential paradigm:

(2)   Cuzco Quechua (Quechuan)

    a.   *Perception*
       Para-sha-n=**mi**.
       rain-PROG-3=**DIR**
       'It is raining, *I see*.'

    b.   *Hearsay*
       Para-sha-n=**si**.
       rain-PROG-3=**REP**
       'It is raining, *I hear*.'

    c.   *Conjecture*
       Para-sha-n=**chá**.
       rain-PROG-3=**CONJ**
       'It must be raining, *I gather*.'   (adapted from Faller 2002: 3, ex.2a-c)

Evidential clitics =*mi*, =*si* and =*chá* signal the way the speaker learned the scope proposition 'It is raining': firsthand as in (2a),[2] via hearsay as in (2b), or via conjecture as in (2c).[3] I will refer to the contribution of evidentials as the *Evidential Requirement* (ER). Throughout the

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2. The gloss used in (2a) translates =*mi* as *direct*. In fact, the spectrum covered by the morpheme is not limited to firsthand perceptual evidence and may include knowledge obtained from an authority, such as an encyclopedia. In Faller's (2002) terminology, =*mi* indicates the 'best possible grounds' for the scope proposition. This issue is orthogonal for the dissertation at large, and is briefly discussed in Chapter 5: Appendix E.

3. (2c) conveys a modalized scope proposition. This reflects Faller's (2002) analysis of =*chá*, and is a common practice in analyzing conjectural and inferential evidentials in general.

text, the ER will be translated in the same way as in (2), with the help of parentheticals such as 'I heard' and the like. This highlights that evidentials are not just about evidence available for *p*, but about *someone*'s information source (see discussion in § 3.5.3). The person whose information source is tracked by evidentials will be referred to as the *(Evidential) Origo*. First used for evidentials by Garrett (2001), this term originates in the literature on deixis (Fillmore 1971; Lyons 1977b).

Below are some more examples of evidential systems from around the globe. A Panoan language Shipibo-Konibo has two evidential forms, *-ra* for information acquired directly (3a) and *-ronki* for information based on hearsay (3b):

(3) Shipibo-Konibo (Panoan)

a. *Direct*
Jawen jema-**ra**   ani   iki
POSS3 village:ABS-**DIR** large COP
'Her village is large. (I have been there.)'

b. *Hearsay*
Jawen jema-**ronki**   ani   iki
POSS3 village:ABS-**REP** large COP
'Her village is large. (I have not been there, I have been told that it is large.)'
(Valenzuela 2003: 33-34, ex.1b-c)

Yet another strategy, common especially in the Anatolia-Balkans-Caucasus region, is instantiated by Georgian below.[4] (4) contains the so-called evidential perfect (Izvorski 1997)—(present) perfect morphology used to express evidentiality. Typically, evidential perfects would have two interpretations, inference and hearsay. Other evidential distinctions are usually not marked morphologically in these languages (though see e.g. (Rivero and Simeonova forth.) for an evidential analysis of the future in Bulgarian).

(4) Georgian (South Caucasian)

a. *Hearsay*
Context 1: My little brother tells me that the dragon hid the treasure.
urtʃxul-s   gandʒ-i   **daumalia**
dragon-DAT treasure-NOM hide.3SG.S.3SG.O.**IND.PST**
'The dragon hid the treasure, *I hear*.'

b. *Visual inferential*
Context 2: I enter the dragon's cave that used to be full of treasure and is empty now.
urtʃxul-s   gandʒ-i   **daumalia**
dragon-DAT treasure-NOM hide.3SG.S.3SG.O.**IND.PST**
'The dragon hid the treasure, *I infer (based on what I see)*.'

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4. Unless indicated otherwise, here and elsewhere data come from my work with language consultants.

The same string, *daumalia*,[5] can have different interpretations. (4a) is an example of hearsay, and (4b) is an example of inference based on visual results. Whether it is a case of an under-specification or of an ambiguity is an open question; for some discussion, see Izvorski (1997) on Bulgarian, Korotkova (2012) on Georgian, Şener (2011) on Turkish.

Generally, evidential systems have two- to four-way oppositions and rarely encode more distinctions; see (Aikhenvald 2004: §2, 23-66) for an overview. Speas (2010) parallels this situation to the shape of tense and aspect systems, which also rarely distinguish between more than four forms at once. The taxonomy of information sources as grammaticalized by evidentials worldwide is summarized in Table 1.1 (taken from (Willett 1988), based on a 32-language sample).

Table 1.1: Information sources worldwide

DIRECT	INDIRECT	
	INFERENCE	HEARSAY
• visual	• reasoning	• secondhand
• auditory	• results	• thirdhand
• other sensory		• folklore

(from Willett 1988)

It is worth highlighting that Willett's (1988) classification of information sources strongly resembles three of the four major types of knowledge recognized within epistemology: perception, reasoning, and testimony (with the exclusion of memory, the fourth type).

In the semantic literature, the notion of information source—how the information about the scope proposition was acquired—is often taken for granted, and various types are regarded as semantic primitives. For the purposes of this dissertation, I will adopt this treatment. Appendix F (Chapter 5) outlines empirical problems with this view and suggests avenues of decomposing information source.

1.2 Types of category

Most literature on evidentiality, both within the typological and the formal semantic tradition, focuses on evidentiality understood as a *grammatical category*. Perfectly reasonable if one is after the shape of grammatical systems, this approach has its limitations if one is after meaning. Semantic categories do not always map onto morphosyntax: for instance, languages with and without tense employ the same mechanisms to talk about temporality (Bittner 2014). Another

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5. High degree of suppletion in the tense-aspect-mood domain is a hallmark of Georgian verbal morphology (Harris 1981; Vamling 1991). Therefore, it is not always possible to single out a morpheme responsible for a particular meaning, unlike in agglitunative languages such as Quechua or Turkish.

example is modality: as I discuss in detail in Chapter 2, it is important to be explicit about the kind of category one has in mind when talking about modality, semantic or (morpho)syntactic. Below I discuss what is usually referred to as evidentials in the literature and what else could be subsumed under this umbrella.

Aikhenvald (2004) explicitly limits her object of study to grammaticalized evidentials (i) whose use is obligatory (the defining property of a category) and (ii) whose primary function is encoding information source (though see (Boye 2010) on the validity of these criteria). Aikhenvald's goal is to separate what she calls genuine evidentials from other categories that occasionally happen to have an evidential flavor. This, in turn, lines up with an overarching goal to show that evidentiality is a full-fledged category, contra the view that dominated the field before her seminal study, according to which it is a sub-category of modality (Bybee 1985; Palmer 1986).

Yet the notion of primary function is a bit obscure. Consider a morpheme that can alternate between expressing aspectual and evidential semantics—exactly the situation of Bulgarian evidential perfect (Izvorski 1997) or Georgian evidential past as shown in (4). Aikhenvald regards such cases as evidential extensions of non-evidential categories (Aikhenvald 2004: §4, 105-152) but does not fully explain how one goes about determining which meaning is primary without, say, looking at their relative frequencies. The same concern arises with modal auxiliaries in e.g. Dutch, German—and even English. Dutch *moeten* encodes hearsay (de Haan 2000). Bochnak and Csipak (2015) argue that the deontic flavor of German *sollen* is parasitic on its evidential semantics. Finally, von Fintel and Gillies (2010) defend the view that epistemic *must* always indicates the speaker's lack of direct evidence. Such facts make it hard to draw a line between primary and non-primary meanings of different grammatical elements.

de Haan (2013b,a) does not emphasize the primary vs. non-primary divide, and the resulting map of grammatical evidentials is represented in below. Out of 414 languages surveyed, 237 have a designated grammatical means to talk about information source, Figure 1.1.[6]

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6. The map I use visually neutralizes the direct vs. indirect distinction (WALS Online Feature 77A; de Haan 2013b) and the distinction between various morphological means, e.g. particles and affixes, used to express evidentiality (WALS Online Feature 78A; de Haan 2013a).

Figure 1.1: Evidentials worldwide
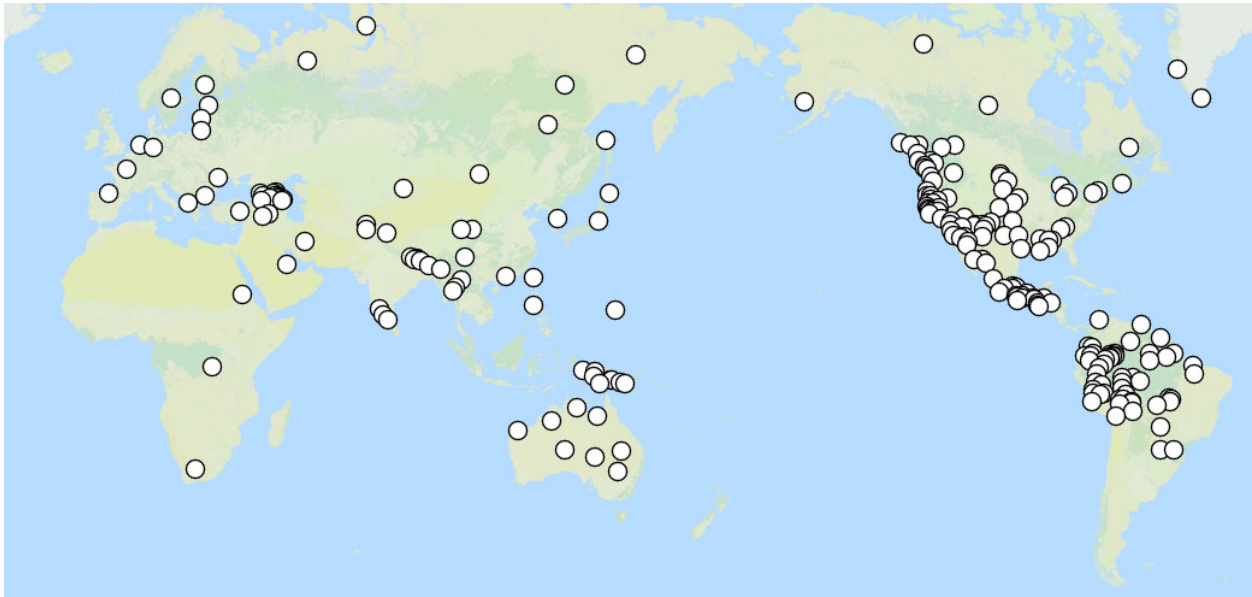
(based on WALS Online Features 77, de Haan 2013b, and 78, de Haan 2013a)

Needless to say, even in the absence of grammatical evidentials, each language would have *some* means to talk about information source. English is a case in point. Even though expressing information source is not obligatory, it certainly is possible via a number of ways such as adverbials as in (5a) (see (Krawczyk 2012) on English; (Matthewson 2012) on St'át'imcets *lákw7a*), adjectives as in (5b), raising constructions as in (5c) (see (Rett et al. 2013; Winans et al. 2015) on English; (Asudeh and Toivonen 2012) on English and Swedish; (de Haan 2000; Koring 2013) on Dutch) and parentheticals as in (5d) (see (Reinhart 1983; Rooryck 2001a; Simons 2007) on English):

(5)   a.   ADVERBIALS
           Climate deniers **apparently** can't feel heat.[7]

      b.   ADJECTIVES
           I can say without a doubt that it was cold for a weekend last week and so the **alleged** drought in California is merely a hoax perpetrated by those femi-nazis in San Francisco (Donald Trump).[8]

      c.   RAISING CONSTRUCTIONS
           It looks like the National Park Service is looking to hire a full-time photographer

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7. From http://goo.gl/LuBk7C.
8. From http://goo.gl/s72x7b.

to traipse around the country and take awesome pictures of our nation's beautiful parks.[9]

d. PARENTHETICAL CLAUSES

There is water on Mars, **I heard**.

The semantic literature mostly focuses on grammatical evidentials and rarely, if at all, takes into account such strategies as in (5). This dissertation is subject to the same criticism. However, modelling evidentiality is a relatively new direction within semantics, and this is a good place to start.

The point to be made is that one has to be careful not to put too much into the semantics, given that evidentiality is not yet being explored across all of its morphosyntactic manifestations. With this caveat, let me proceed to one of the central topics of the dissertation, cross-linguistic variation in evidentiality.

1.3 Variation

Evidentials across languages vary along several dimensions. Table 1.2 below gives a partial portrait of the variation:

Table 1.2: Evidentiality: some parameters of variation

	Cheyenne	Quechua	Georgian	Tagalog	Tibetan	Turkish
1. Embedding in attitudes	☹	☹	✓	✓	✓	✓
2. Shift in attitudes	N/A	N/A	☹	✓ must	✓ must	✓ may
3. Shift to addressee in questions	✓	✓	N/A	✓	✓	✓
4. Quotative readings	☹	✓	☹	✓	☹	☹

N/A: not available; must: obligatory shift; may: optional shift

Data sources: Georgian, Turkish: own data; Cheyenne: (Murray 2010);
Cuzco Quechua: (Faller 2002); Tagalog: (Schwager 2010); Tibetan: (Garrett 2001)

The choice of parameters in 1.2 is not random: these are tests used in the dichotomy theories (Faller 2007; Matthewson et al. 2007) to distinguish between the alleged two classes of

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9. From http://goo.gl/zjtluK.

evidentials.

The first parameter, embedding in attitudes (discussed in Chapter 3), is about whether or not evidentials in a given language can be syntactically embedded under attitude verbs.[10] Consider the following example from English:

(6)   Tweedledee thinks [that **reportedly** Tweedledum spoiled his new rattle].

The first parameter introduces a two-way contrast between languages that allow configurations as in (6) and those that do not.

The second and third parameters deal with interpretation. Evidentials are tracking someone's information source. Who is the evidential origo? First, consider a root declarative sentence:

(7)   **Reportedly** Tweedledum spoiled a nice new rattle.

In languages with grammatical evidentials, it is the speaker who is the evidential origo in sentences of the form (7). In other environments, it is not always the case. Cases when the evidential authority is someone other than the speaker will be called *evidential shift*.

The second parameter, shift in attitudes (discussed in Chapter 7), is about the interpretations that evidentials—those that can be syntactically embedded—receive in attitude reports.[11] There are several logically possible options. Consider the following example (I am not making any claims about English, and *reportedly* is used for the sake of simplicity):

(8)   Tweedledee thinks [that **reportedly** Tweedledum spoiled his new rattle].

    (i)   NON-SHIFTED ≈ 'Tweedledee thinks that—**given what I heard**—Tweedledum spoiled his new rattle.'

    (ii)   SHIFTED ≈ 'Tweedledee thinks that, **given what he (=Tweedledee)**, heard, Tweedledum spoiled his new rattle.'

When embedded under *think* and other attitude predicates, the evidential may remain speaker-oriented, as in (8i), or may shift, as in (8ii). The second parameter introduces a three-way contrast between no-shift languages, obligatory-shift languages, and optional-shift languages:

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10. In the semantic literature, the term *embedding* is often used as a proxy for *semantic embedding under various operators*. To avoid confusion, here and elsewhere I use the term *embedding* only in the syntactic sense to refer to clausal subordination. When it comes to interaction with negation and other clause-mate operators such as e.g. tense, I will use the term *scope*.

11. Here and elsewhere the term *attitude reports* is used to cover *attitude reports* (complements of e.g. *think*) as well as *speech reports* (complements of e.g. *say*), as in e.g. (Schlenker 1999).

A. NO-SHIFT LANGUAGES: the evidential origo has to be the speaker (only the interpretation (8i) available)

B. OBLIGATORY-SHIFT LANGUAGES: the evidential origo has to be the attitude subject (only the interpretation (8ii) available)

C. OPTIONAL-SHIFT LANGUAGES: the evidential origo may be the speaker and may be the attitude subject (both (8i) and (8ii) are available)

The third parameter, shift in questions (discussed in Chapter 8), is about the interpretations that evidentials receive in questions. In questions, at least the following logically possible interpretations are available (again, no claims are made about English):

(9) Did Tweedledum **reportedly** spoil his new rattle?

(i) NON-SHIFTED ≈ '**Given what I heard**, did Tweedledum spoil his new rattle?'

(ii) SHIFTED ≈ '**Given what you heard**, did Tweedledum spoil his new rattle?'

The evidential origo could be the speaker, as in (9i), or the addressee, as in (9ii). In natural language we only see the shifted interpretation.

The fourth parameter is about a special interpretation some evidentials may receive in questions and imperatives. The closest analogue of such readings in questions is a relayed question, a situation when the speaker is not the asker but is just saying that a third party asks a question, as in *Someone said: Did Tweedledum spoil his new rattle?*, where the contribution of the evidential is roughly equivalent to that of *someone said*. I will call such interpretations *quotative*.

The dichotomy view predicts that evidentials that belong to the same class would pattern together. The actual variation does not fulfill this prediction. Table 1.2 highlights the big-picture problem: the variation is not unidimensional. For instance, languages where evidentials are not embeddable (Cheyenne, Quechua) are not the same as languages that allow quotative readings (Quechua, Tagalog). Or shift in questions is not a predictor of shift in attitudes. Another problem with the dichotomy view is that it is not instrumental in explaining each of the differences. For instance, the (in)ability to appear in or to shift in attitudinal complements (discussed respectively in Chapters 3 and 7), is not reducible to the modal vs. illocutionary divide.

The overarching goals of the dissertation are twofold. First, the dissertation uncovers the semantic uniformity of evidentials of all stripes; see Chapters 4, 6, 5 and 8. Second, the dissertation tackles Table 1.2 in a principled way. Chapters 3, 7 and 8 tell a story about the first three parameters, respectively. There is also a short discussion of the fourth parameter in §2.4.3, and I provide a full analysis in (Korotkova ming). I will show that, for the large part, the the currently attested cross-linguistic variation in evidentials can be reduced to factors independent of evidentiality.

The central questions I am concerned with are as follows:

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— What is universal for evidentials across languages?

— What is subject to variation?

— What is the source of the observed variation?

— Are there cases of genuine semantic variation?

1.4   The dissertation in a nutshell

The dissertation develops a unified semantics for evidentials across languages, modulo the differences in the information source (visual, conjectural, hearsay, etc.), which itself will be taken as a primitive. I argue that grammatical evidentials talk about first-person mental states and thus belong to the class of *subjective* expressions. Such expressions describe self-knowledge, which in turn constrains their linguistic behavior across a range of environments. Specifically for evidentials, I show that subjectivity explains in a uniform manner (i) the disagreement patterns in dialogues, which have been previously attributed to a special discourse status of the information contributed by evidentials (Izvorski 1997 and later work), and (ii) the lack of certain interpretations in attitude reports and in questions, which has received no attention in the literature in the case of attitudes and very little in the case of questions. I show that empirical facts about the linguistic behavior of evidentials are not explained by the theories that make no reference to non-linguistic and linguistic subjectivity associated with evidentials. I further argue that the existing variation is due to sources external to the semantics of evidentials.

I provide two variants of the semantics for evidentials. In the **first variant**, subjectivity is rooted in the non-linguistic pragmatics of cognitive processes described by evidentials. This implementation may seem at first less intuitive than the second variant. However, it has the advantage of being more explanatory. It derives the properties of evidentials in natural language from general properties of perception and introspection, capitalizing on observations from epistemology and philosophy of mind. Under this angle, linguistic effects of subjectivity come for free.

In the **second variant** (which I first proposed in (Korotkova 2015)), evidentials receive a semantics of first-person attitude ascriptions. This variant is more heavy-handed that the first one. However, it has the advantage of being more explicit. It encodes self-knowledge directly in the semantics of evidentials. Both variants say the same thing, and throughout the dissertation I will include them alongside of each other.

Section 1.4.1.1 addresses the notion of subjectivity that I am using and its application to evidentiality. Sections 1.4.1.2 and 1.4.1.3 lay out the formal implementation. Summaries of individual chapters, including my take on variation, are given in section § 1.4.2.

1.4.1   Summary of the proposal

1.4.1.1   Subjectivity

Individuals have privileged and exclusive access to certain kinds of information about themselves, through senses and introspection. This includes, but is not limited to: (A) **feelings**,

such as being angry or excited, (B) **mental states**, such as thinking a particular thought or having a desire, as well as some (C) **bodily sensations**, such as experiencing pain or hunger. Self-knowledge obtained via these channels is *incorrigible* in that the experiencer enjoys a special epistemic status and others have no grounds to contest such knowledge. If I am tired, for instance, I am the one and only authority over this state of mine.

Linguistic expressions that describe experiences such as above will be called *subjective*. The class of subjective expressions includes, among others, (A) first-person **attitude reports** such as *I hope*, (B) first-person statements with **psych verbs** such as *I am excited*, (C) **epistemic modals** (EM) such as *might*, and (D) **predicates of personal taste** (PPT) such as *delicious*. If explicit perfomatives (*I promise*) are true by say-so, linguistic subjectivity can be described as *true by feel-so*. So, if I utter a sentence such as *I am in pain*, the sentence will be true if I am speaking sincerely. Cognition constrains language: some features of the linguistic behavior of subjective expressions result from the very nature of experiences described. Importantly, subjectivity only characterizes first-person uses of such expressions, because the experiencer has the highest epistemic authority. In cases of non first-person uses, these effects no longer ensue.

I argue that evidentials, too, describe a first-person subjective experience and are associated with a mental state that describes the acquisition of evidence for p.[12] It means that Origo is the one and only authority over their evidence, and a third party is not in a position to assess Origo's evidence.

This analysis has two ingredients. First, I argue that evidentials describe an experience to which only the experiencer has access. Second, I argue that evidentials have an obligatory first-person component as part of their conventional meaning, which I formalize as indexicality. This component is responsible for the fact that evidentials cannot be used to make statements about other people, unlike for instance attitude verbs.

This treatment is in contrast with the existing theories of evidentiality wherein having evidence for p is an objective fact of the world, which, in principle, may be evaluated by others. I show that the subjectivity of evidentials explains their behavior across a range of environments in a uniform way. This underlying uniformity is not predicted or handled by the current approaches.

Subjectivity at work I It has been long noticed (Izvorski 1997; Faller 2002; Matthewson et al. 2007; Murray 2014) that grammatical evidentials resist disagreement in discourse, the property referred to as *non-challengeability* (here and elsewhere, green indicates the target of disagreement):

(10)   A. **Evidently**, gender inequality is a global problem, one that is culturally embedded and systematically enforced in many countries.[13]
         B. No, that's not true. / You are mistaken. / You're wrong.

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12. As I will discuss in Chapter 4, the notion of subjectivity is reminiscent of Faller's (2002) notion of *mental performativity (m-performativity)*.
13. From http://goo.gl/joalsI.

(i) $= \neg$ [Gender inequality is a global problem] $\boldsymbol{p}$

(ii) $\neq \neg$ [It is evident to A that gender inequality is a global problem] **ER**

As the dialogue in (10) demonstrates, B' reaction may only target the scope proposition (10i), but not A's having some kind of evidence for it (10ii). The non-challengeability of evidentials has been one of the key empirical arguments for analyzing them on a par with Pottsian supplements and classic presuppositions—elements that contribute peripheral information, called *Not-At-Issue* (NAI) (in the sense of Tonhauser et al. 2013), and therefore cannot be targeted by direct reponses. I argue against this view as it makes incorrect predictions—unlike the subjective analysis that I advocate.

Since (Potts 2005), appositive relative clauses have been analyzed as contributing not-at-issue information. As (11) below illustrates, it is possible to disagree with the not-at-issue content introduced by an appositive modulo the constraints on propositional anaphora. *That's not true* may indeed only target at-issue propositions, likely due to restrictions on the salience of its antecedent (Jasinskaja 2016). However, *You're mistaken*, for example, is much freer and *can* target the content of an appositive, which is analyzed as contributing not-at-issue information since.

(11) A. . . . the President's inflammatory comments, **in which he offered full-throated praise for such controversial fields of knowledge as math and science**, are sure to come back to haunt the Democrats in November.[14]

      B. That's not true.

(i) $= \neg$ [The comments will haunt Democrats in November] **AI**
(ii) $\neq \neg$ [In the comments the President praised math and science] **appositive**

      B'. You're mistaken.

(i) $= \neg$ [The comments will haunt Democrats in November] **AI**
(ii) $= \neg$ [In the comments the President praised math and science] **appositive**

Subjective expressions, on the other hand, ban *all* kinds of disagreement about content. Incorrigibility of knowledge restricts the range of reactions to statements with subjective expressions in the following way. Because only the experiencer has access to said experience, genuine disagreement is impossible in dialogues. Consider the following case:

(12) A. I have a splitting headache.

      B. #No, that's not true. / #You are mistaken. / #You're wrong.

B's reaction in (12)—be it *That's not true* or *You are mistaken*—is utterly infelicitous because only A knows whether or not A feels pain, so A's being in pain is not up for negotiation. By virtue

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14. From *New Yorker*; http://goo.gl/k2ZJEz.

of self-knowledge about pain being incorrigible (a non-linguistic fact), B cannot felicitously disagree (a linguistic fact) with A regarding A's having pain.

Evidentials, too, disallow *all* kinds of disagreement about content, regardless of the strategy used. This is not predicted by NAI views on evidentiality but falls out naturally once evidentials are analyzed as dealing with first-person epistemic states. I argue that the pattern in question is of the same nature as in the case of pain. Origo is the one and only authority over their epistemic state. Just like it is infelicitous to contest that one has a particular thought or belief, it is infelicitous to react to statements with evidentials in the way outlined in (10ii).

To reiterate, it is not possible to disagree with one's having a particular subjective experience because such experience is ultimately first-person and others have no access to it. Discourse participants know that a potential disagreer has no real basis for disagreement, and that is what makes disagreement in (12) infelicitous.

Disagreement with subjective expressions, including evidentials, may only take place in the case of assumed insincerity or incompetence of the speaker. Odd out of the blue, such interaction requires special pragmatic licensing. Consider the pain case from (12). B *may* utter their response if they think that A is lying (insincerity) or is under anesthesia (incompetence). Note that this is not an ordinary case of disagreement about the facts of the world, but rather a challenge to the premises of an utterance. I will refer to such cases as 'performance disagreement', adopting Anand's (2009) term for similar facts about taste ascriptions. It is discussed in detail in § 4.5.

Subjectivity at work II   Subjectivity precludes third-party assessment, and this property also manifests itself in the behavior of evidentials in attitude reports. As I have first observed in (Korotkova 2015), embedded evidentials universally disallow readings such that having evidence for *p* is ascribed to Origo by a third party. This is illustrated in a simplified fashion in (13) below (again, English is used for the sake of representation):

(13)   Castor is sure that solar panels—**apparently**—are efficient.

    (i)   ≈ '**It seems to me that solar panels are efficient** and Castor is sure that solar panels are efficient.'
       This interpretation is attested.

    (ii)   ≈ 'Castor is sure that solar panels are efficient and also **is sure that it seems to me that solar panels are efficient**.'
       This interpretation is out across languages.

In (13), Origo is the speaker. The difference between the two logically possible interpretations of (13) is as follows. In (13i), the speaker has a particular evidential belief regarding the scope proposition. In (13ii), on the other hand, it is the attitude subject who ascribes the evidential belief to the speaker. Across languages, interpretations such as (13ii) are systematically not attested. Such interpretations should be compatible with the speaker having a different evidential judgment, not the one ascribed by the attitude subject. Therefore, their absence can be diagnosed, for instance, by the impossibility of continuations like the following one: *As a*

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matter of fact, I am absolutely convinced that solar panels are efficient and Castor is just mistaken about what I think.

This fact has not been discussed before and has no immediate explanation in the current theories. The generalization falls out naturally under the subjective treatment of evidentials. Given that Origo is the one and only authority over their evidential experience, it is not felicitous to use an evidential to describe what others think about Origo's evidence.[15]

Subjectivity at work III Attitude reports reveal another previously unnoticed property of evidentials. Whenever making an evidential statement, the evidential origo is aware of having the type of evidence discussed and cannot attribute evidence to someone without recognizing that this individual is no one else but Origo oneself. In other words, such statements are always *consciously* made about oneself. The evidential origo is thus similar to English PRO, whose behavior is illustrated in (14) below:

(14) *Context: Winnie the Pooh and Piglet are going to hunt a certain animal called a Woozle. The adventure begins when they find footprints in the woods that they think must have been made by one of these creatures, and decide to see where the tracks lead. Unbeknownst to them, however, they have been walking in circles: the footprints are Pooh's own, while the smaller tracks that they thought were made by a Wizzle are in fact the marks of Piglet's little feet.*

Pooh tells Piglet that the tracks have been made by a Woozle, with something like 'He is a Woozle':

a. Pooh$_i$ claimed that **he**$_i$ was a Woozle.

b. # Pooh$_i$ claimed **PRO**$_i$ to be a Woozle.
      (adapted from Pearson 2013b: 559-560, based on A. Milne's "Winnie the Pooh")

(14a) can be paraphrased as something like 'Pooh claimed of someone that he was a Woozle. Unbeknownst to Pooh, that someone is himself', and is felicitous in the scenario above. On the other hand, the content of Pooh's speech cannot be described with (14b). The contrast between (14b) and (14a) highlights that English PRO requires awareness on part of the attitude holder that it is the attitude holder, and nobody else, who is the referent of PRO. Pronouns such as *he*, on the other hand, do not have such restrictions.

In semantics, attitude ascriptions that carry an awareness requirement are known as attitudes 'de se' (> Latin 'about self') (Chierchia 1989 and much subsequent work). PRO can only be used in attitudes 'de se' and has to be construed obligatorily 'de se'. Things could have been otherwise, and English PRO could have been used roughly in the same way as *he* (though see

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15. (13) only illustrates cases where the evidential origo is the speaker. The same generalization holds in cases where Origo is the attitude subject. Across languages, only third-party assessment is banned in attitudes. The system I propose captures it straightforwardly once complemented with a mechanism that allows embedded evidentials to refer to someone other than the speaker. I introduce such a mechanism in 1.4.1.3 and discuss it in detail in Chapter 7.

Patel-Grosz (2015) on the interaction of morphology, i.e. being a null or phonologically weak pronoun, and interpretation).

I argue that for subjective expressions the 'de se' requirement is not arbitrary and thus offer a new route to 'de se'. Specifically, I show that the ban on non-'de se interpretations for evidentials is an instance of a more general pattern: it is impossible to use an evidential to ascribe evidence to a third party. This property manifests itself in particular in amnesiac scenarios that serve as a litmus test for 'de se'. I argue that evidentials are subjective and are 'de se' as a result of that. This comes as no surprise in an analysis wherein evidentials directly deal with perception and introspection, cognitive processes that resist third-party assessment. Other, non-subjective, analyses of evidentiality do not explain the 'de se' requirement.

Subjectivity at work IV   It has been noticed for a wide variety of languages that evidentials in questions are anchored to the addressee (Lim 2010; Murray 2010: a.m.o). The pattern is illustrated in (15) below:

(15)   If free will is the reason for God's non-intervention, then why did he **allegedly** intervene on so many occasions in the affairs of humanity?
                                            (Richard Woo "God Or Allah, Truth Or Bull?")

    a.   NON-SHIFTED ≈ '**Given what I heard**, why did he intervene?'

    b.   SHIFTED ≈ '**Given what you heard**, why did he intervene?'

Grammatical evidentials do not allow non-shifted readings as in (15a) while shifted readings as in (15b) are freely available.

I argue that the seemingly obligatory nature of evidential shift is a result of the interaction of subjectivity of evidentials and the pragmatics of normal, information-seeking, questions. I show that there are in principle two types of situation in which an evidential could be anchored to the speaker in questions:

— A speaker-anchored reading should be available if the speaker is not aware of what their own evidence is, and is making an inquiry regarding it. This condition is in direct conflict with subjectivity and cannot be met.

— A speaker-oriented reading should be also possible when the speaker is aware of their evidence and already knows the answer to the question. This is impossible in an information-seeking question due to the conflict with its pragmatics: ordinary questions are sincere inquiries for information. However, the condition can be met in non-canonical questions such as rhetorical questions, and evidentials can be speaker-oriented in such types of questions.

I show that analyses wherein evidential shift is an obligatory grammatical mechanism in effect overgenerate and make wrong predictions regarding the behavior of evidentials in other environments. Subjectivity, on the other hand, helps to explain these facts without additional machinery.

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Different types of subjective expressions   I mentioned above that subjective expressions form a large class. Evidentials look similar to bare uses of Epistemic Modals (EMs) and Predicates of Personal Taste (PPTs) in that there is no overt experiencer. While there is always an origo, a knower and a taster, respectively, the sentence does not specify who that individual is. This is determined contextually.

Without committing to a particular analysis of EMs and PPTs (see (von Fintel and Gillies 2008b; Weatherson and Egan 2011; MacFarlane 2014) for an overview of the space of analytical options), I argue that the type of context-sensitivity exhibited by evidentials is different from that of EMs and PPTs (cf. also Moltmann's (2012) distinction between two types of first-person content). EMs and PPTs exhibit *judge*-dependence: even in root declarative sentences, they don't have to be anchored to the speaker (or only to the speaker) and may also reflect someone else's opinion. This person is often called *judge* (the term is from (Lasersohn 2005) and here I use it in a theory-neutral way).

One type of the scenarios that uncover the need for judges is called "faultless disagreement" (Kölbel 2003)—a situation when the two parties seem to disagree without either of them being strictly wrong. This is illustrated for PPTs in (16) below:

(16)   A.   Candied grasshoppers are delicious.

      B.   No, they are gross.

The dialogue in (16) says, roughly, that A finds candied grasshoppers delicious while B finds them gross. None of the parties disagrees with what each of them experiences, as per subjectivity. None of them is wrong, so it is not a dispute about facts of the world, as it would have been in a discussion about whether or not candied grasshoppers are available in the nearby grocery store.

Evidentials, on the other hand, do not give rise to disagreements of such sort. Hearing my evidential statement, it is not felicitous for my interlocutor to disagree with me based on the fact that they do not have such evidence for p. This is similar to statements with indexicals:

(17)   A.   I am in pain.

      B.   #No, I am not.

EMs and PPTs have a "public" component and do not always reflect one's exclusive knowledge or taste, which can be analyzed in terms of e.g. genericity (Bhatt and Pancheva 1998; Anand 2009; Moltmann 2010, 2012; Pearson 2013b), group-relativity (DeRose 1991; von Fintel and Gillies 2008a), or dependence on who hears the sentence (Egan et al. 2005; Stephenson 2007a; MacFarlane 2014). Evidentials are inherently "private" and always talk about Origo's exclusive experience. I further analyze the implicit argument of evidentials as an indexical, whose behavior is similar to that of *I*.

The details of my view are given below. Before I lay out the proposal, some assumptions are in order.

1.4.1.2 Basic toolkit

I will assume that the interpretation function is relativized to a context c, an index i and an assignment g. A context specifies circumstances of an utterance, such as who is speaking, to whom, where or in what world, and is represented as a tuple of type k:

(18) $c_k = \langle author, hearer, location, \ldots, world \rangle$

Following Kaplan 1989, I will treat *indexical pronouns*, such as *I*, *you* and *here*, as expressions that directly refer to the context coordinates.[16] Such expressions are context-sensitive in that their value is determined solely by a given context: *I* refers to the current utterer of a sentence, *you* to the current addressee, etc. Such expressions are also world-independent, in that there is no reference to worlds on the right-hand side in the lexical entries in (19) below:[17]

(19) a. $[\![\text{ I }]\!]^{c,i,g} = \text{AUTHOR}(c)$

  b. $[\![\text{ you }]\!]^{c,i,g} = \text{HEARER}(c)$

  c. $[\![\text{ here }]\!]^{c,i,g} = \text{LOCATION}(c)$

Following Anand and Nevins (2004); Anand (2006), I will treat the index as an object of type k:

(20) $i_k = \langle author, hearer, location, \ldots, world \rangle$

In words, indices, like contexts, are tuples that record information about the speaker, the addressee, the world, etc.

At the root level the index and the context are the same. The two diverge when embedded. The index parameter is manipulated by intensional operators, while the context parameter remains intact. As a result, the value of indexical expressions remains unchanged by ordinary intensional quantification:

(21) Mo said that I am tired.

  a. ✓Mo said that the speaker is tired.

  b. # Mo said that she (Mo) is tired.

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16. Kaplan assumes a similar treatment for demonstratives such as *this*. I will not discuss them.

17. Lexical entries in (19) ignore 'fake' indexicals (Partee 1989; Cable 2005; Kratzer 2009; Wurmbrand 2015). Sentences like *Only I finished my breakfast* have an interpretation 'Nobody else finished their breakfast', where *my* does not refer to the actual speaker and is instead bound. The existence of such readings challenges the Kaplanian view and suggests that *I* and *you* get their value from the assignment and not from context. Imposters such *yours truly* (Podobryaev 2014) and non-personal pronouns do not have bound readings, and thus may be true Kaplanian indexicals. This entire issue is orthogonal to my analysis, which can be, if necessary, reformulated with the possibility of binding in mind by e.g. adopting Sudo's (2012) system.

Following Schlenker (1999, 2003); Anand and Nevins (2004); Anand (2006), I will assume that some languages, e.g. an Iranian language Zazaki and a Semitic language Amharic, have a way to shift the context parameter, thus allowing pronouns like *I* to refer to someone other than the current speaker. In those languages, (21b) is a licit interpretation of (21). Such interpretations will be called *shifted*, and the phenomenon is known under the name *indexical shift*.

Context-shifters—operators that manipulate the context—will be called *monsters*. The term is due to Kaplan, who argued against the existence of such operators in natural language, despite nothing in the formal system prohibiting them.

Monsters can only occur in the complements of some attitude predicates, most notably *say*. Following Anand and Nevins (2004); Anand (2006), I will adopt the following view on how monsters and attitude predicates are interpreted.

Attitude predicates will be analyzed as quantifiers over indices (a departure from the standard view (Hintikka 1969) on them as quantifiers over worlds):

(22) $[\![\text{say } \phi]\!]^{c,i,g} = \lambda x_e.\forall i'$ compatible with what x says at i, $[\![\phi]\!]^{c,i',g}$

In words, attitude predicates shift the index parameter of their complement. I will assume that the predicate combines with its complement via Intensional Functional Application, which leads to (22):

(23)   **Intensional Functional Application** (IFA)
       If α is a branching node and $\{\beta, \gamma\}$ the set of its daughters, then, for any context c, index i and assignment g: if $[\![\beta]\!]^{c,i,g}$ is a function whose domain contains $\lambda i'.[\![\gamma]\!]^{c,i',g}$, then $[\![\alpha]\!]^{c,i,g} = [\![\beta]\!]^{c,i,g}(\lambda i'.[\![\gamma]\!]^{c,i',g})$

       (notational variant of 11 in (von Fintel and Heim 2011: 25))

Monsters will be analyzed as operators that shift the character by replacing the context parameter of their sister with its index parameter:

(24) $[\![\text{👻}]\!]^{c,i,g} = \lambda\chi.\chi(i)(i)$

(24) above describes an operator that shifts the context in its entirety. I adopt the view according to which there can be other monsters that partially shift the context, e.g. overwrite only the location coordinate.

The following rule of semantic composition guarantees that the monster's argument is of the right type:

(25)   **Monstrous Functional Application** (MFA)
       If α is a branching node and $\{\beta, \gamma\}$ the set of its daughters, then, for any context c, index i and assignment g: if $[\![\beta]\!]^{c,i,g}$ is a function whose domain contains $\lambda c'.\lambda i'.[\![\gamma]\!]^{c',i',g}$, then $[\![\alpha]\!]^{c,i,g} = [\![\beta]\!]^{c,i,g}(\lambda c'.\lambda i'.[\![\gamma]\!]^{c',i',g})$

Here is a schematic derivation of an attitude report that contains a monster:

(26) $[\![$ say $[$ 👻 $[$ ϕ $]$ $]$ $]\!]^{\langle Author_c,\ Hearer_c,\ \dots\ \rangle,\ \langle Author_i,\ Hearer_i,\ \dots\ \rangle,\ g}$
     $= \lambda x_e.\forall i'$ compatible with what x says at i, $[\![$ 👻 $[$ ϕ $]$ $]\!]^{\langle A_c,\ Hearer_c,\ \dots\ \rangle,\ \langle A_{i'},\ H_{i'},\ \dots\ \rangle,\ g}$
     $= \lambda x_e.\forall i'$ compatible with what x says at i, $[\![\phi]\!]^{\langle A_{i'},\ H_{i'},\ \dots\ \rangle,\ \langle A_{i'},\ H_{i'},\ \dots\ \rangle,\ g}$

First, the attitude verbs shifts the index parameter of the complement clause, from i to i'. Second, the monster overwrites its context parameter, from c to i'. As a result, all context-sensitive expressions contained within the complement will shift in the presence of a monster. For instance, expressions that refer to the speaker at the root level will refer to the author of the reported context, x.

The same effect as that of IFA and MFA can be achieved in an extensional system (see Cresswell 1990; Percus 2000) that has world and context pronominal variables in the syntax. Such an implementation of indexical shifting is adopted by Schlenker (1999, 2003); Sudo (2012); Shklovsky and Sudo (2014); Podobryaev (2014).

1.4.1.3 Proposal

I will treat evidentials as sentential operators that take propositional arguments and, in root clauses, yield the following LFs:

(27) $[$ EV $[$ ϕ $]$ $]$

I analyze the evidential origo as an indexical and add another individual coordinate to the context and index:

(28) c $= \langle author,\ hearer,$ **origo**$,\ location,\ \dots,\ world \rangle$

Origo directly refers to the respective coordinate. In root declarative clauses, Origo is the same as Author:

(29) $\text{ORIGO}(c^*) = \text{AUTHOR}(c^*)$

In indices introduced by attitude reports, Origo is the same as Author of the embedded context.

I propose two variants for the semantics of evidentials.

Variant I In this variant, the subjectivity of evidentials falls out once the proper understanding of processes they describe is factored in. The semantics itself, given in (30), does not mention that evidentials describe self-knowledge.

(30) $[\![\text{EV}]\!]^{c,i,g} = \lambda p.\ p(i) \wedge \text{ACQUIRE}(p)(Origo_c, w_c)$,
where ACQUIRE is a stand-in for predicates that specify how Origo learned the scope proposition

In words, the lexical entry in (30) says that a statement with an evidential makes two contributions. It asserts the scope proposition. It also asserts that Origo acquired the scope proposition in the way lexically specified by the evidential marker (hearsay, visual inference, etc).

Variant II The second variant treats evidentials are a type of 'de se' attitude report. It uses the following notion of subjective epistemic alternatives (cf. Stephenson 2007b: 44, ex.56):

(31) $\text{EPIST}_{x,w} = \{\langle x', w' \rangle \mid$ it is compatible with what x knows in w' for x to be x' in $w' \}$

The generalized lexical entry for evidentials looks as follows:

(32) $[\![\text{EV}]\!]^{c,i,g} = \lambda p.\ p(i) \wedge \forall \langle x', w' \rangle \in \text{EPIST}_{Origo_c, w_c} : \text{ACQUIRE}(p)(x', w')$,
where ACQUIRE is a stand-in for predicates that specify how Origo learned the scope proposition

In words, the lexical entry in (32) says that a statement with an evidential makes two contributions. It asserts the scope proposition. It also asserts that, in all world-individual pairs compatible with what Origo knows in the world of evaluation, the individual that Origo identifies as oneself acquired the scope proposition in the way lexically specified by the evidential marker (hearsay, visual inference, etc). In short, evidentials deal with Origo's epistemic alternatives.

Below is a sample derivation for a root declarative sentence with an evidential (the last step is in (34) and (35) as achieved because $\text{ORIGO}(c^*) = \text{AUTHOR}(c^*)$):

(33) a. Jane **allegedly** came.
 ≈ Given what I heard, Jane came.

 b. LF: [allegedly [Jane came]]

(34) **Variant I**
$[\![[\text{ allegedly } [\text{ Jane came }]]]\!]^{c,i,g}$
$= [\![\text{allegedly}]\!]^{c,i,g}(\lambda i'.[\![\text{Jane came}]\!]^{c,i',g})$
$= 1$ iff Jane came at $i \wedge Origo_c$ heard in w_c that Jane came
$= 1$ iff Jane came at $i \wedge Author_c$ heard in w_c that Jane came

(35) **Variant II**
$[\![\,[\text{ allegedly } [\text{ Jane came }]\,]\,]\!]^{c,i,g}$
$= [\![\text{allegedly}]\!]^{c,i,g}(\lambda i'.[\![\text{Jane came}]\!]^{c,i',g})$
$= 1$ iff Jane came at $i \;\wedge\; \forall \langle x',w'\rangle \in \text{EPIST}_{Origo_c,w_c} : x'$ heard in w' that Jane came
$= 1$ iff Jane came at $i \;\wedge\; \forall \langle x',w'\rangle \in \text{EPIST}_{Author_c,w_c} : x'$ heard in w' that Jane came

To account for the evidential shift in attitudes, I argue that some languages have an evidential monster in their lexicon. I introduce a partial context-shifter that only shifts Origo and the world coordinate of its sister:

(36) $[\![\, 👻_{EV}\; \phi_{k,t} \,]\!]^{\langle Author_c,...,\boldsymbol{Origo_c w_c}\rangle,i,g} = [\![\,\phi\,]\!]^{\langle Author_c,...,\boldsymbol{Origo_i,w_i}\rangle,i,g}$

Below is a sample derivation for an embedded evidential in its shifted interpretation:

(37) a. Mary said that Jane allegedly came.
   SHIFTED $\approx$ Mary said that, given what she (Mary) consciously heard, Jane came.

   b. LF: [Mary said [👻$_{EV}$ [allegedly [Jane came]]]]

(38) **Variant I**
$[\![\,[\text{ Mary said } [\, 👻_{EV}\, [\text{ allegedly } [\text{ Jane came }]\,]\,]\,]\,]\!]^{c,i,g}$
$= [\![\text{ say }]\!]^{c,i,g}(\lambda i'.[\![\, 👻_{EV}\, [\text{ allegedly } [\text{ Jane came }]\,]\,]\!]^{c,i',g})([\![\text{ Mary }]\!]^{c,i,g})$
$= 1$ iff $\forall i'$ compatible with what Mary said at i,
   $[\![\, 👻_{EV}\, [\text{ allegedly } [\text{ Jane came }]\,]\,]\!]^{\langle Author_c,\boldsymbol{Origo_c},...,w_c\rangle,i',g}$
$= 1$ iff $\forall i'$ compatible with what Mary said at i,
   $[\![\text{allegedly } [\text{ Jane came }]\,]\!]^{\langle Author_c,...,\boldsymbol{Origo_{i'},w_{i'}}\rangle,i',g}$
$= 1$ iff $\forall i'$ compatible with what Mary said at i,
   Jane came at $i' \;\wedge\; \boldsymbol{Origo_{i'}}$ heard in $\boldsymbol{w_{i'}}$ that Jane came

(39) **Variant II**
$[\![\,[\text{ Mary said } [\, 👻_{EV}\, [\text{ allegedly } [\text{ Jane came }]\,]\,]\,]\,]\!]^{c,i,g}$
$= [\![\text{ say }]\!]^{c,i,g}(\lambda i'.[\![\, 👻_{EV}\, [\text{ allegedly } [\text{ Jane came }]\,]\,]\!]^{c,i',g})([\![\text{ Mary }]\!]^{c,i,g})$
$= 1$ iff $\forall i'$ compatible with what Mary said at i,
   $[\![\, 👻_{EV}\, [\text{ allegedly } [\text{ Jane came }]\,]\,]\!]^{\langle Author_c,\boldsymbol{Origo_c},...,w_c\rangle,i',g}$
$= 1$ iff $\forall i'$ compatible with what Mary said at i,
   $[\![\text{allegedly } [\text{ Jane came }]\,]\!]^{\langle Author_c,...,\boldsymbol{Origo_{i'},w_{i'}}\rangle,i',g}$
$= 1$ iff $\forall i'$ compatible with what Mary said at i,
   Jane came at i'
      $\wedge\; \forall \langle x',w'\rangle \in \text{EPIST}_{\boldsymbol{Origo_{i'},w_{i'}}} : x'$ heard in w' that Jane came

In the toy example in (37), there is a monster in the complement of *say*. Said monster shifts the value of Origo and the world, therefore the embedded evidential is anchored to Mary and targets Mary's epistemic alternatives.

Three remarks should be made about the analysis I advocate. First, I treat evidentials as non-illocutionary in that there is no explicit reference to speech acts in (30) and (32). As I will argue throughout the dissertation, currently there is no evidence for an exclusively illocutionary analysis. If such evidence becomes available, my major claims can be recast accordingly.

Second, the implicit Origo argument of evidentials has no representation in the syntax. I adopt this view because, for instance, evidentials can never take overt experiencer phrases that would specify who Origo is. This is in contrast with predicates of taste that can take such arguments, as in *Pineapples are delicious to/for Lo*. Based on this and other facts, the taster is often given an overt syntactic representation (Bhatt and Pancheva 1998; Stephenson 2007a,b; Schaffer 2011; Pearson 2013b). This move is debated even for PPTs (Collins 2013), and for evidentials, I do not see reasons to encode Origo in the syntax. Additionally, in Chapter 8 I argue against a particular syntacticized analysis along the lines of (Speas and Tenny 2003) as it overgenerates.

Third, it is often argued (Faller 2002; Murray 2010) that at least some inferential evidentials assert a modalized version of p while at least some hearsay evidentials do not assert p at all and just state the fact of having heard p. The strength of p is not central to my proposal. If necessary, respective modifications can easily be made without affecting my major claims about subjectivity.

1.4.2   Individual chapters

The dissertation consists of three parts. Part I introduces several competing views on evidentiality and scrutinizes their empirical adequacy by looking at cases that have been used to motivate different formal approaches.

Chapter 2 surveys the state of the art of the research on evidentiality. Its purpose is to set the stage for the discussion in the following chapters, which detail the behavior of evidentials in dialogues, attitudes and questions. It introduces major formal semantic approaches to evidentiality in individual languages and then reviews different takes on the cross-linguistic variation, namely the dichotomy view and the modal view. I will show that most of the facts can be accounted for within either of the approaches and that current empirical diagnostics do not in fact distinguish between modal-like and illocutionary elements. The chapter thus lays out the groundwork for my proposal, which in a way is orthogonal to the current debate and is presented in detail in Part II.

Chapter 3 is devoted to syntactic embedding. Languages vary in whether evidentials can appear in attitudinal complements. In some languages, e.g. Georgian (South Caucasian; Boeder 2000), such syntactic embedding of evidentials is possible, while in some others, e.g. Abkhaz (Northwest Caucasian; Chirikba 2003), it is not. The literature takes the variation in embeddability as a confirmation for the dichotomy view on evidentiality, according to which some evidentials are akin to epistemic modals and some are illocutionary operators. The claims range from "Non-embeddable evidentials have to be illocutionary" to "Embeddable evidentials have to be modal". The chapter argues against this view. I show that while (non-)embeddability is indeed a matter of cross-linguistic variation, it is not a case of genuine semantic variation in evidentiality. Drawing on data from Turkish, I propose that restrictions on embedding of

evidentials result from the interaction of their morphosyntactic category with the availability of respective embedders in a given language. The variation is thus reducible to factors independent of evidentiality. These facts can be handled by *any* analysis of evidentiality and thus do not resolve the modal-illocutionary debate.

Part II shows that several seemingly unrelated puzzles in the semantics of evidentials stem from one source: subjectivity, and spells out the formal proposal.

Chapter 4 is on evidentials in dialogues. Across languages, grammatical evidentials exhibit the property of non-challengeability: they resist direct denial in dialogues. The literature attributes this property to the not-at-issue status of the information contributed by evidentials. In this chapter, I argue against that view and show that with respect to disagreement, evidentials pattern with subjective expressions such as first-person belief reports and statements about pain. Like other subjective expressions and unlike e.g. appositives, evidentials ban *all* kinds of disagreement about content and not just explicit denial. This novel observation has no account in the literature. It falls out naturally once a theory of evidentiality treats evidentials on a par with other subjective expressions. It is thus unnecessary to appeal to a special discourse status of evidentials to explain their behavior in conversations.

Chapter 5 is a companion to Chapter 4. Based on universal constraints that evidentials across languages exhibit in attitudinal complements, the chapter provides further empirical arguments for the subjectivity of evidentials. Specifically, I focus on the logically possible, but systematically not attested, interpretations wherein having evidence for *p* is ascribed to Origo by a third party. This new observation has no straightforward account in the current literature: some approaches overgenerate, while some others undergenerate. I argue that, just like in the case of conversational disagreement discussed in Chapter 4, the linguistic behavior of evidentials-in-attitudes is rooted in the non-linguistic properties of cognitive processes described by evidentials. Because these processes resist third-party assessment across the board, readings such that evidence is ascribed to Origo by a third party are banned in attitudes. I further show that evidentials are obligatorily 'de se' and derive that fact from subjectivity, thus offering a new route to 'de se'. This is in contrast to more standard approaches to 'de se' construal, which view it as an arbitrary property of grammar.

Chapter 6 highlights a difference between evidentials on the one hand and a special class of subjective expressions on the other: epistemic modals and predicates of personal taste. As can be seen in scenarios involving disagreement with, and retraction of, modal or taste claims, the relevant knower or taster does not have to be the speaker. Furthermore, there is no straightforward procedure that would identify this individual. This special type of context-sensitivity, often called judge-dependence, is notoriously hard to analyze. I show that evidentials do not exhibit such judge-dependence and that evidential claims are always about the speaker in unembedded declarative sentences. The new kind of data I introduce provides a much needed empirical argument in the debate on the status of evidentiality in relation to epistemic modality as a semantic category. These data are correctly predicted by the proposal I advocate, but in and of itself the pattern is not an argument for a particular analysis. The chapter is thus programmatic: its purpose is to raise a problem, rather than to settle on a solution.

Part III deals with evidential shift and puts evidentials in a broader context of perspective-sensitive expressions.

Chapter 7 builds on the material from Chapter 5 and is a precursor to Chapter 8. I start with the empirical observation that languages vary with respect to whether or not evidentials-in-attitudes *shift*, i.e. whether they are speaker-oriented (as in root declaratives) or not. The variation has been previously attributed to semantic non-uniformity of evidentials. I argue against that view: first, shifting in attitudes does not correlate with other properties of evidentials, and second, the modal-illocutionary dichotomy is in fact not helpful in deriving the interpretational differences in shifting. I propose that evidential shift is an instance of indexical shift driven by a monster operator à la Anand and Nevins (2004), which explains previously unnoticed similarities in restrictions on both kinds of shift.

Chapter 8 shows that the behavior of evidentials in questions is strikingly uniform across languages. First, evidentials *shift*, namely, they change their perspective from speaker to the addressee. Second, a logically possible interpretation is not attested, namely, a reading such that evidentials-in-questions remain speaker-oriented. The first property is frequently discussed in the literature and there is a number of competing accounts. The second property is not addressed directly and is usually derived as a side effect. I show that theories hard-wiring the shift into the semantics and/or syntax of evidentiality make wrong predictions. I further argue that the inability to be speaker-oriented in ordinary, information-seeking, questions is an intrinsic property of evidentials and that the shift is better understood in pragmatic terms. This approach correctly predicts that evidentials may, after all, be anchored to the speaker in non-canonical questions, such as quiz questions and biased questions.

Chapter 9 concludes with a detailed to-do list that outlines the remaining empirical gaps to be filled in by future research.

1.4.3 Outlook

The dissertation makes two central claims. The first one is about heterogeneity. I argue that there is no evidence for genuinely semantic cross-linguistic variation in evidentiality that cannot be explained by appealing to independent factors.

The second claim is about uniformity. I identify a range of properties that evidentials within and across languages have in common, and argue that these properties stem from one underlying source, the subjective core of evidentiality rooted in the incorrigibility of self-knowledge associated with the cognitive processes it describes. I then propose a semantics wherein evidentials denote first-person mental states.

These overarching ideas are fed by an array of individual claims, articulated below together with routes to falsification.

I claim that the attested variation in evidentiality is not unidimensional. To falsify this claim, one would need to come up with a single parameter giving rise to the variation. I show that the alleged modal-illocutionary dichotomy is not such parameter.

I claim that there is little variation in the semantics of evidential markers (modulo the distinctions in information source). To falsify this claim, one would need to come up with a case of genuinely semantic variation. An example of such variation would be the existence of challengeable evidentials or evidentials that allow speaker-oriented readings in information seeking questions.

I claim that the patterns of conversational disagreement with evidentials and their non-challengeability require a subjective component and do not lend support to the not-at-issue view on evidentials. To falsify this claim, one would need to come up with better empirical diagnostics of (not-)at-issueness that would not be tied to projection, and to further investigate denying and non-denying propositional anaphora.

I claim that assessment-insensitivity—the fact that evidentials do not give rise to "faultless disagreement" and retractions—is an argument against equating evidentiality and epistemic modality. I further show that these facts corroborate the strict contextualist analysis I propose. To falsify the general claim, one would need to conduct a side-by-side comparison of inferential evidentials and counterparts of *must* in respective languages. To falsify the specific analysis, one would need to show that evidentials are non-indexical.

I claim that embeddability of evidentials is due to their morphosyntactic category and the availability of complementation strategies that could host that category. To falsify this claim, one would need to identify potential semantic distinctions between different types of complements.

I claim that evidentials are subject to a universal constraint in attitudes that bans third-party assessment interpretations. To falsify this claim, one would need to discover evidentials that do not obey this constraint.

I claim that evidential shift in attitudes is a variety of indexical shift. To falsify this claim, one would need to further investigate conditions on shifting, e.g. availability of shift with different attitudes and information sources.

I claim that evidential shift in questions is due to pragmatics and argue that speaker-oriented readings are ruled out in information-seeking questions due to subjectivity. To falsify this claim, one would need to look at environments that tease apart semantics and pragmatics: embedded questions and questions with epistemic bias.

I hope to see future research challenging, corroborating, expanding on, or refuting the claims above.

Analytical and empirical variation

CHAPTER 2

Semantics for evidentials within and across languages

Abstract: This chapter surveys the state of the art of the research on evidentiality. Its purpose is to set the stage for the discussion in the following chapters, which detail the behavior of evidentials in dialogues, attitudes and questions. It introduces major formal semantic approaches to evidentiality in individual languages and then reviews different takes on the cross-linguistic variation, namely the dichotomy view and the modal view. I will show that most of the facts can be accounted for within either of the approaches and that current empirical diagnostics do not in fact distinguish between modal-like and illocutionary elements. The chapter thus lays out the groundwork for my proposal, which in a way is orthogonal to the current debate and is presented in detail in Part II.

2.1   Introduction

Most formal semantic approaches to evidentiality within individual languages gravitate towards one of the landmarks: (A) an (Izvorski 1997)-style **modal analysis**, wherein evidential markers are formally treated as epistemic modals within the Kratzerian framework; or (B) a (Faller 2002)-style **illocutionary analysis** wherein evidentials are treated as interacting with the structure of speech acts. In what follows, (Izvorski 1997) and (Faller 2002) are each used as a proxy for the family of formally-similar analyses of evidentiality that contains various ramifications and modifications of said approaches.

Izvorski's (1997) pioneering work on evidentiality in Bulgarian (South Slavic) uses the Kratzerian semantics for modals to formalize the long-standing typological tradition that evidentiality is a sub-category of modality (Bybee 1985; Palmer 1986; van der Auwera and Plungian 1998). Similarly-spirited approaches exist for: German *sollen* (Ehrich 2001; Faller 2007, 2012); Japanese (McCready and Ogata 2007); Korean (Lee 2013); St'át'imcets (Matthewson,

Davis, and Rullman 2007; Matthewson 2012); Tibetan (Garrett 2001); Cuzco Quechua (Faller 2011). The empirical motivation for this approach comes from the similarities between evidentials in e.g. Bulgarian and the more familiar epistemic modals such as *must*. It is argued that because both types of expressions deal with the likelihood of the scope proposition in view of some body of knowledge, they should be treated as markers of epistemic necessity. Later research explicitly argues for an evidential component of the epistemic *must* (von Fintel and Gillies 2010; Lassiter 2016), and thus reinforces the connection between the two categories.

The illocutionary view on evidentiality emerged as a response. Faller's (2002) seminal work is, in a way, a fastidious reflection on the fact that Cuzco Quechua evidential enclitics =*mi*, =*si* and =*chá* from (2) do not, prima facie, pattern with *must* and *might*. For instance, English modal auxiliaries, but not Cuzco Quechua evidentials, can take narrow scope with respect to some semantic operators. As another example, reportative =*si*, but not the epistemic *must*, can be used when the speaker is agnostic about, or overtly disagrees with, the truth of the scope proposition. This constellation of facts led Faller to an analysis wherein Cuzco Quechua evidentials modify the sincerity conditions of a speech act. Based on data from Cheyenne, whose evidentials resemble the Quechua ones in many aspects, Murray (2010, 2014) puts forth a view wherein each speech act brings about a series of updates and evidentials interplay with them. Koev (2016) adopts this view for evidentiality in Bulgarian. Embedded in a different formal tradition, Murray's analysis makes otherwise similar predictions to that of Faller.

The growing body of cross-linguistic data on evidentiality made it apparent that evidentials across and within languages may vary along several dimensions. Research on the cross-linguistic variation in this domain, tied to understanding different types of content and levels of meaning, has two main strands. The **dichotomy view** on evidentiality (Faller 2007; Matthewson et al. 2007) places the variation in the semantics of respective markers. According to it, evidentials fall into (at least) two semantic classes: (A) modal evidentials that necessitate an Izvorski-style analysis, and (B) illocutionary evidentials that necessitate a Faller/Murray-style analysis. The **modal view** on evidentiality, adopted by Matthewson in her recent work (Matthewson 2012), leans back to the typological tradition and argues that semantically, all evidentials are Izvorski-style epistemic modals. This view entails that the variation is due to factors independent from the semantics of evidentials.

In linguistics, it is common to provide a comparison of the theories to ultimately argue for *the* right one. The goal of this chapter is rather to review different approaches to evidentiality and to dissect their predictions. The main take-home message is as that current approaches do not exhaust all analytical options and do not provide adequate empirical diagnostics that would uniquely identify either modal or illocutionary evidentials.

I argue that the lack of semantic variation in evidentiality—the idea I defend via providing factual evidence and an articulated analysis for several cases—only shows that it is a semantically homogeneous category, but does not bear on the modal-illocutionary debate (pace Matthewson 2012).

I then show that currently used empirical tests do not in fact distinguish between modal-like and illocutionary elements, as the relevant data can be handled within either of the approaches. The inefficiency of those tests is a result of two related problems.

First, the literature does not properly define the natural classes that the diagnostics are

aimed at distinguishing: (epistemic) modals and illocutionary operators. For instance, *might* and *must* are often used as a stand-in for the large and varied category of (epistemic) modality. Second, the properties of those natural classes are often conflated with the properties and limitations of the formalism. For instance, it is assumed that modals are propositional operators because the Kratzerian framework is used as a baseline, while even for *must* there are alternative options (Yalcin 2007, 2011; Swanson 2011).

Finally, 'modal' and 'illocutionary' are not the only ways to construe the semantics of evidentials. For instance, the approach I spell out in Part II is neither strictly modal nor strictly illocutionary, which only underscores the need for better positive diagnostics for being an epistemic modal or being an illocutionary operator. The bulk of this chapter is devoted to showing that the literature does not offer such diagnostics. In § 2.5, I point out a potential diagnostic for being an illocutionary operator. If dealing with speech acts can be broadly defined as being about discourse commitments, then the difference between discourse commitments and private beliefs and intentions can serve as a basis for identifying truly illocutionary evidentials. Furthermore, in Chapter 6, I argue that assessment-sensitivity is a property of epistemic modality as a semantic category and thus can be used as an empirical test.

The chapter is structured as follows. § 2.2 outlines Izvorski's (1997) analysis to evidentiality, the first example of a modal treatment. § 2.3 discusses alternative, illocutionary approaches, focusing on (Faller 2002). § 2.4 presents the views on cross-linguistic variation and two applications, non-committal and quotative uses. § 2.5 concludes.

2.2   Modal treatment of evidentials: Izvorski (1997)

Modals, broadly speaking, talk about the likelihood of some proposition in view of some body of knowledge in case of *epistemic modality*; given the set of laws and rules in case of *deontic modality*; depending on someone's wishes if it is *bouletic*; etc. In the Kratzerian semantics ((Kratzer 1981, 1991, 2012); see also overview in (Hacquard 2011)), different modal words receive a unified analysis by virtue of being relativized to two conversational backgrounds determined contextually: (i) a modal base f and (ii) an ordering source g. What these two backgrounds are depends on the flavor of modality, but it is not clear whether natural language has all of the analytically possible combinations of modal bases and ordering sources.

The modal base maps the world of evaluation to a set of propositions that are, e.g. known to be true in case of epistemics, etc. Ordering source induces an ordering over the modal base and represents some relevant set of wishes, laws, standards of normalcy, etc. Worlds are ranked by how ideal they are, i.e. by how close they come to satisfying all propositions determined by the ordering source. In some cases, the ordering source can be empty. According to Kratzer, only quantificational force of a modal is fixed lexically, though later research discovered variable-force modality (Matthewson et al. 2007), see (Yanovich forth.) for a recent discussion of the phenomenon.

Izvorski's (1997) object of study is Bulgarian evidential perfect that can receive an inferential or a hearsay interpretation (similar to the Georgian case in (4)):

(40) Bulgarian (South Slavic)
      Ivan izpi-**l**   vsičko-to vino včera.
      Ivan drunk-**IND.PST** all-DEF   wine yesterday
      'Ivan drank all the wine yesterday, *I hear/infer*.'   ([Izvorski 1997](): 13, ex.13)

(40) can be felicitously used when the speaker sees empty wine bottles in Ivan's office or hears it from a reliable source.

To analyze what *-l* does, Izvorski introduces an indirect evidentiality operator *Ev*. It is modelled within the possible world apparatus as a doubly-relative universal modal with a presupposition specifying the existence of relevant evidence. The main motivation for encoding the evidential requirement as a presupposition comes from the fact that it cannot be targeted by negation (a property traditionally associated with presuppositions; see Chapter [4]()), as illustrated in (41) below:

(41) A. Bulgarian
          Ivan izkara-**l**   izpi-ta.
          Ivan pass-**IND.PST** exam-DEF
          'Ivan passed the exam, *I hear/infer*.'

      B. That's not true.
          $= \neg$ [Ivan passed the exam] **scope proposition**
          $\neq \neg$ [You hear/infer that Ivan passed the exam] **existence of evidence**

          ([Izvorski 1997](): 7-8, ex.16)

Below I present an analysis of *Ev* that does not follow Izvorski to the letter but preserves the core insights. The closest, but not identical, formal version is that of [Faller]() ([2011]()).

I. The modal base. Epistemic modal base f_{ep} is a function that maps every world w to a set of propositions that comprise what is known in w.

(42) $f_{ep}(w) = \{z \mid z \text{ is known in } w \}$

$\cap f_{ep}(w)$ is a set of worlds accessible from w such that these are worlds where propositions in the modal base are true:

(43) $\cap f_{ep}(w) = \{u \mid \forall z \in f_{ep}(w).u \in z\}$

This is a standard epistemic modal base.

II. The ordering source. Stereotypical ordering source g is a function that maps every world w to a set of propositions that represent the normal course of events in w (e.g. 'the Sun sets in the west' is normal in our world).

(44) $g_{st}(w) = \{q \mid q \text{ is normal in } w\}$

An ordering source provides an ordering on the words in $\cap f_{ep}(w)$: v is better than u if it verifies more worlds:

(45) $\forall u, v : v <_{g(w)} u$ iff $\{q \mid q \in g(w) \wedge u \in q\} \subset \{q \mid q \in g(w) \wedge v \in q\}\}$

max is a function that gives the set of maximal worlds from the modal base with respect to the ordering source:

(46) $max_{g_{st}(w)}(\cap f_{ep}(w)) = \{w' \in \cap f_{ep}(w) \mid \neg \exists v \in \cap f_{ep}(w).v <_{g_{dox}(w)} w'\}$

This is a standard stereotypical ordering source.

III. Truth conditions. The evidential statement Evp is true in w with respect to conversational backgrounds provided by the modal base f and the ordering source g, just in case p is true in all closest accessible worlds, and is undefined otherwise.

(47) Lexical entry for Ev

1. PRESUPPOSITION:

    $[\![Ev]\!]^{c,w,f,g}(p)$ is defined just in case
    $\exists Z\{z \mid z \text{ is indirect evidence for } p \text{ in } w\} \wedge Z \subseteq f_{ep}(w)$

    This presupposition ensures that, first, there are propositions that constitute indirect evidence for p, and that all such propositions are known and therefore are in the modal base.

2. ASSERTION

    If defined, $[\![Ev]\!]^{c,w,f,g}(p) = \forall w' \in max_{g_{st}(w)}(\cap f_{ep}(w)).p(w')$

(47) encodes the evidential restriction as a presupposition. In Izvorski's original approach, evidential restriction is encoded by the modal base and by the ordering source. The analysis above is more modular: it gives us a vanilla epistemic modal with a standard modal base and an ordering source. Its special property—evidential requirement—is encoded via a presupposition on the operator itself, which in a way is reminiscent of (von Fintel and Gillies 2010).

Below is a derivation for a shortened version of (40):

(48) Ivan izpi-**l**   vino.
      Ivan drunk-**IND.PST** wine
      'Ivan drank-*Ev* wine'.
      modal base: $f = \{\text{'there are empty bottles in Ivan's office', } \dots\}$

ordering source: $g = \{\text{'empty bottles indicate prior drinking'}, \ldots\}$

a. PRESUPPOSITION:

$[\![Ev]\!]^{c,w,f,g}(drank.wine(Ivan))$ is defined just in case
$\exists Z\{z \mid z$ is indirect evidence for $(drank.wine(Ivan))$ in $w\} \wedge Z \subseteq f_{ep}(w)$

$[\![Ev]\!]^{c,w,f,g}(drank.wine(Ivan))$ is defined since *(there.are.bottles)* is evidence for *(drank.wine(Ivan))* in w and we assume that $(there.are.bottles) \in f$

b. ASSERTION

$[\![Ev]\!]^{c,w,f,g}(drank.wine(Ivan)) = \forall w' \in max_{g_{st}(w)}(\cap f_{ep}(w)).drank.wine(Ivan)(w')$

Given the ordering source that contains an explicit connection between empty bottles and drinking, it is likely that the actual world is one of the Ivan-drank-wine worlds, but it does not have to be so, which preserves Izvorski's original idea.

The advantage of the doubly-relative framework is that it allows to capture different uses of the same word. For instance, English *may* can be used deontically as in *You may come in* and epistemically as in *Jay may be in Berlin*. Because the conversational backgrounds are determined by context, there is no need to postulate homophony. At the same time, it is clear that some modal words pose restrictions that end up being stipulated, e.g. *to be able to* does not have epistemic uses. Given that evidentials arguably require an epistemic modal base and a stereotypical ordering source, modal analyses of evidentiality within this framework inherit this problem.

2.3 Illocutionary treatment of evidentials: Faller (2002)

The empirical landscape of evidentiality in Cuzco Quechua inspired Faller's (2002) analysis, according to which evidentials deal with communicative intentions of the speaker and with the overall structure of speech acts. In Cuzco Quechua, evidential enclitics *=mi*, *=si* and *=chá* take obligatory wide scope with respect to negation, tense and conditionals, and cannot occur in attitude reports or conditional antecedents. Additionally, hearsay *=si* does not require that the speaker endorse the truth or likelihood of the scope proposition. The central idea of Faller's (2002) analysis, formalized within the speech act theory (Searle and Vanderveken 1985; Vanderveken 1990), is that Cuzco Quechua evidentials are speech act modifiers that operate at the level of meaning higher than the proposition.

Speech act, or *illocutionary act*, is a communicative situation. Speech acts come in different flavors, depending on the *illocutionary force*: assertion, question, exclamation, promise, threat, etc. Each speech act has several components:[18]

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18. I only mention those that are relevant for the semantics of evidentials.

(49) Anatomy of a speech act (Searle and Vanderveken 1985; Vanderveken 1990)

    A.   the propositional content p;

    B.   the illocutionary force ILL;

    C.   the sincerity conditions SINC: a set of mental attitudes of the speaker towards p such that they should be met in order for the speaker to be sincere in performing a given speech act. E.g. in plain assertions the sincerity condition is for the speaker to believe p (cf. Gricean *Maxim of Quality*);[19]

    D.   degree of strength, e.g. 0 for plain assertions.[20]

In this system, a plain assertion without any evidential markers would have some propositional content, would bear an illocutionary force of assertion, and its sincerity conditions would require that the speaker believes the propositional content.[21] This is schematized in (50) below:

(50) Semantics for assertions

p

$\text{ILL} = \text{ASSERTS}_s(p)$

$\text{SINC} = \{Bel(s, p)\}$

$\text{STRENGTH} = 0,$

where s is the speaker

(51, repeated from 2a) is a sentence with the direct evidential =*mi*:

(51) Cuzco Quechua
Para-sha-n=**mi**.
rain-PROG-3=**DIR**
'It is raining, I *see*.'

Faller analyzes =*mi*, as well as other evidentials in Cuzco Quechua, as a function from speech acts to speech acts. It modifies the sincerity conditions of an utterance by adding an evidential requirement, namely, that the speaker has best possible grounds for believing p (which includes, but is not limited to, direct perception). In addition to that, Faller argues, evidentials may interact with the assertion strength, and =*mi* increases it (this move is motivated by native

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19. Faller does not explicitly discuss the relation between the sincerity conditions on the one hand and speech act norms on the other, such as norms of assertion.

20. Relative strength of different assertions, and especially assertions with evidentials, is a controversial notion. Take, for example, *must*: some argue that *must* is strong and entails its prejacent (von Fintel and Gillies 2010), while some others insist on following the tradition that it is weak (Lassiter 2016).

21. Note that other views on the norms of assertion would require justified belief or knowledge; see (Williamson 2000) for discussion.

speakers judging sentences with =*mi* as more emphatic). The semantics for =*mi* is given in (52) below:[22]

(52) Lexical entry for =*mi*

  -mi: $\begin{array}{l} \text{ASSERT}(p) \\ \text{SINC} = \{Bel(s,p)\} \end{array}$ $\longmapsto$ $\begin{array}{l} \text{ASSERT}(p) \\ \text{SINC} = \{Bel(s,p), \textbf{Dir(s,Bel(s,p))}\} \end{array}$

  Dir: the speaker has direct evidence to believe *p*

(adapted from Faller 2002: 167, ex.130)

Combining the semantics for assertion from (50) and the semantics for =*mi* from (52) gives the following interpretation of (51):

(53) Para-sha-n=**mi**.
  rain-PROG-3-**DIR**

  $p =$'It is raining.'

  ILL $= \text{ASSERTS}_s(p)$

  SINC $= \{Bel(s,p), Dir(s,Bel(s,p))\}$

  STRENGTH $= +1$ (Faller 2002: 25, ex.16)

In Cuzco Quechua, just like in Bulgarian in (41) above, the availability of evidence to the speaker cannot be targeted by negation or otherwise explicitly challenged or denied. Modal approaches derive this property, referred to as *non-challengeability*, via an evidential presupposition. Faller derives the same property via an evidential sincerity condition.

Sincerity conditions—just like presuppositions—cannot be targeted by negation, though for a different reason: negation is a propositional operator whose scope does not include speech-act content. Consider an example with an explicit performative below:

(54) I promise not to hike the Continental Divide Trail in the winter.

  (i) $=$ [promise [¬*p*]] **proposition**

  (ii) $\neq$ ¬ [promise [*p*]] **performative**

Sentential negation in (54) does not affect the illocutionary force of a promise and only affects the scope proposition. Such examples show that the information associated with speech acts is not accessible to propositional operators (though see Krifka (2014) for special cases). The advantage of her analysis, Faller argues, is that sincerity conditions contribute discourse-new

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22. This is a simplified version that does not account for the meaning of =*mi* in questions, for which see (Faller 2002: 192, ex.232).

information. Presuppositions, on the other hand, are pieces of information shared by interlocutors prior to the conversation, which is often used as an argument against presuppositional analyses of evidentiality.

In a similar vein, the discourse status of the evidential requirement is the centerpiece of Murray's (2010; 2014) work on Cheyenne (Algonquian). Cheyenne evidentials resemble the Quechua system in many aspects and Murray's theory makes similar predictions to Faller's analysis outlined in this section. The differences between the two approaches are mainly conceptual.

Faller's system is, in a way, uni-dimensional. It postulates several levels of meaning, with the propositional content below the speech-act material. Even though potential syntactic repercussions play no role in the original proposal, this view lines up with the cartographic framework wherein speech acts are overtly represented in the topmost projections in the clausal spine (Cinque 1999; Rizzi 1997). In (Korotkova forth), I re-implement Faller's insights within Krifka's (2014) framework that offers the advantage of a more transparent syntax-pragmatics interface—an analytical option that becomes important in the context of syntactic embedding (Chapter 3).

Murray's system is implemented within dynamic formal semantics (and as such does not have a straightforward interface with syntax). The point of departure is the place of evidentials among other types of meaning. It is argued that evidentials resemble parentheticals, appositives and non-restrictive relative clauses (Pottsian supplements). On the one hand, both types of expressions are claimed to contribute new information, unlike presuppositions. On the other, like presuppositions, both are claimed to be backgrounded, which makes them inaccessible for discourse operations such as denial. Recent research on types of content identifies such backgrounded content as not-at-issue (Simons et al. 2010; Tonhauser et al. 2013), and Murray develops an articulated model for updates with different kind of content. The contribution of evidentials and supplements is treated as a secondary assertion. A similar proposal is made for parentheticals by Dillon, Clifton, and Frazier (2013). Based on data from processing, they argue that parentheticals constitute a separate speech act.

The specifics of Murray's view and the role of evidentials in discourse become relevant in Chapter 4. For the majority of the data that I draw on elsewhere in the dissertation, (Faller 2002) and (Murray 2010, 2014) pattern together in terms of predictions and therefore will be discussed alongside of each other as part of one illocutionary family.

2.4   Formal semantics for evidentials: cross-linguistic applications

Building on the background introduced above, this section presents two major approaches to cross-linguistic variation in evidentials: the modal view and the dichotomy view. I then discuss two properties of hearsay evidentials that initially motivated a speech-act analysis.

2.4.1 Views on the cross-linguistic variation

The behavior of evidentials varies across languages along several dimensions. The existing literature offers two views on the cross-linguistic variation in evidentials:

The dichotomy view (e.g. Faller 2007; Matthewson et al. 2007): the source of variation is semantic heterogeneity of evidentials, which calls for an Izvorski-type analysis for those of them that are modal and a Faller-type analysis for those of them that are illocutionary.

The modal view (Matthewson 2012): there is only one semantic class of evidentials and it is modal evidentials, which need an Izvorski-type analysis. Cross-linguistic variation is due to external factors.[23]

Throughout the dissertation I advance an alternative view, which shares Matthewson's (2012) sentiment about the variation but disagrees with her central claim. Based on a series of case studies, I argue that the existent cross-linguistic variation is not due to, and in fact cannot be explained by appealing to, the semantics of evidential markers in question in general and to the modal-illocutionary dichotomy in particular. I further show that even evidentials that differ in some aspects (e.g. whether or not they can appear in conditionals) exhibit semantic uniformity. All evidentials resist denials in dialogues (Chapter 4) and disallow non-speaker oriented readings in root clauses (Chapter 6). All evidentials that can appear in attitude reports resist third-party assessment in these environments (Chapter 5). All evidentials that can appear in interrogatives shift in these environments (Chapter 8). I argue that subjectivity is responsible for these similarities and endorse an agnostic position about the choice between a modal or an illocutionary analysis. Subjectivity is compatible with both modal and illocutionary treatments, but currently there are non knock-down arguments for either.

In the remainder of this section I discuss two of the quirks that motivated a non-modal analysis of some hearsay evidentials, and the dichotomy view on the variation as a consequence. I will be concerned with the following questions:

— How to best account for a given property, à la Izvorski or à la Faller?

— How to best account for the variation in case not all evidentials exhibit the property?

2.4.2 Quirk #1: non-commitment

2.4.2.1 The pattern

Hearsay evidentials often allow non-commitment on part of the speaker to the scope proposition and even statements of the form [Evp] $\wedge$ [¬p], where the speaker knows the scope proposition to be false, as evidenced by (55) below:

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23. This view has a syntactic correlate. According to Rooryck (2001a,b); Speas (2004, 2010), evidentials have a fixed syntactic position at the left periphery of the clause (as per Cinque 1999).

(55) Cuzco Quechua

Pay-kuna=**s** ñoqa-man-qa qulqi-ta muntu-ntin-pi saqiy-wa-n, mana-má riki
(s)he-PL=**REP** I-ILLA-TOP money-ACC lot-INCL-LOC leave-1O-3 not-SURP right
riku-sqa-yki ni un sol-ta centavo-ta-pis saqi-sha-wa-n-chu
see-PP-2 not one sol-ACC cent-ACC-ADD leave-PROG-1O-3-NEG
'They left me a lot of money, *as it is said*, but, as you have seen, they didn't leave me
one sol, not one cent.' (Faller 2002: 191, ex.152)

The continuation in (55) indicates that the speaker merely communicates the fact of report,
not an attitude to the truth or likelihood of the scope proposition.

In contrary to the pattern exhibited by hearsay evidentials, *must* is incompatible with a
direct denial of the predjacent:

(56) # There must be water on Mars. But there is no water on Mars.

(56) is contradictory. Intuitively, epistemic modals require that the speaker at least considers
p a possibility, and a possibility of p is incompatible with an explicit denial of p. This fact is
problematic for Kratzer and other theories where *must* is weak; see 2.4.2.3 below.

The literature incorrectly takes the contrast between (56) on the one hand and (55) on the
other to indicate that non-commital hearsay evidentials are not epistemic modals. I argue that
the contrast only shows that such evidentials do not pattern with *must*. Below I discuss the
strength of *must* and two approaches to the contrast in question:

Illocutionary analysis speech acts with not-committal evidentials are not ordinary assertions,
and such evidentials and *must* belong to different semantic categories (Faller 2002; Murray 2010)

Modal analysis not-committal evidentials are non-epistemic modals (Ehrich 2001; Faller 2011;
Matthewson 2012)

2.4.2.2 An illocutionary analysis

Recall from section § 2.3 that Faller (2002) analyzes evidentials as functions from speech acts
to speech acts. The main function of direct =*mi*, for example, is to add a new sincerity con-
dition specifying that the speaker has best possible grounds to believe the scope proposition
(formalized in 52). As evidenced by (55), with =*si* the speaker is not committed to p in any
capacity. Consequently, =*si* would have a different semantics.

Faller argues that sentences with =*si*—declaratives and not only—constitute another type
of speech act: that of "presentation". A special feature of speech acts of this sort is that usual
sincerity conditions do not apply, and the only condition is that the speaker has hearsay evi-
dence. For instance, the speaker does not need to believe p if =*si* applies to an assertion.

Below is a generalized version of the semantics for =*si*:

(57) Lexical entry for =*si*

$$\textbf{-si:} \quad \begin{array}{l} \textsc{ill}(p) \\ \textsc{sinc} = \{M(s,v)\} \end{array} \quad \longmapsto \quad \begin{array}{l} \textbf{\textsc{present}}(p) \\ \textsc{sinc} = \{\exists s_2(Ill(s_2,p) \land s_2 \notin \{h,s\})\} \end{array}$$

(Faller 2002: 234, ex.196)

In words, =*si* can take any speech act, with whatever sincerity conditions it has (represented as *M*—recall that sincerity conditions are mental attitudes accociated with particular types of speech acts, formulated in terms of mental predicates) and turn into a speech act of *presentation* by completely overwriting the resulting illocutionary effect and sincerity conditions.[24]

   (57) says that the speaker witnessed a speech act and then reproduces it without any commitment that would be usually associated with this type of speech act. In assertions, it results in presenting a proposition that somebody uttered before, which in a way is equivalent of saying that the speaker has hearsay evidence for said proposition. An assertion-specific semantics for =*si* is given in (58) below:

(58) What =*si* does in assertions

$$\textbf{-si:} \quad \begin{array}{l} \textsc{assert}(p) \\ \textsc{sinc} = \{Bel(s,p)\} \end{array} \quad \longmapsto \quad \begin{array}{l} \textbf{\textsc{present}}(p) \\ \textsc{sinc} = \{\exists s_2\, [\, Assert(s_2,p) \land s_2 \notin \{h,s\} \,]\} \end{array}$$

(Faller 2002: 200, ex.167)

In words, someone other than the current speaker uttered *p*, and the speaker does not necessarily believe *p*. The sincerity conditions are overwritten, and nothing is asserted. This gives the following semantics for (59, repeated from 2b):

(59) Para-sha-n=**si**.
rain-PROG-3=**REP**

$p =$'It is raining.'
$\textsc{ill} = \textsc{present}(p)$
$\textsc{sinc} = \{\exists s_2\, [\, Assert(s_2,p) \land s_2 \notin \{h,s\} \,]\}$

   Under this analysis, non-commitment is a lexical property of Cuzco Quechua =*si*.

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24. As Faller admits, "presentation" is a bit of a placeholder. This is one of the criticisms put forth by Murray (2010, 2014), who otherwise deals with similar data within a framework that shares some formal aspects of Faller's proposal. In Murray's system, all speech acts involve presenting the scope proposition by introducing a discourse referent for it. Ordinary assertions include a proposal to update the common ground with *p*. Assertions with hearsay evidentials lack this component, which accounts for the non-commitment on part of the speaker. However, Murray does not discuss the status of the reporter. For Faller, this person is committed to the reported proposition (cf. also Smirnova 2012), and Murray does not derive that.

2.4.2.3 A modal analysis

Epistemic modals   Non-committal uses have served as a strong argument against a modal analysis for evidentials that have them. This reasoning illustrates the overarching problem with the modal-illocutionary debate: properties of natural language phenomena and properties of the formalism are often conflated.

According to Kratzer (1981, 1991) (and the long-standing tradition in semantics), *must* is weak: *must p* does not entail *p*. This is achieved in the following fashion. *Must* universally quantifies over the most normal of the epistemically possible worlds, and, because there is a stereotypical ordering source, the world of evaluation may not be in the domain of the quantifier. As shown by Yalcin (2007) for *might*, such semantics does not rule out epistemic contradictions of the form [*must p*] $\wedge$ [$\neg p$].[25] At the same time, they are impossible in natural language (56). Yalcin further shows that the contradictions survive in embedded contexts and thus the ban should follow from the semantics of epistemics. This is in contrast with Moore-paradoxical sentences whose infelicity is due to the pragmatics of assertion and therefore is not replicated in embedded contexts (see (Stephenson 2007b: Ch.5, 167-192) and (Pearson 2013b: §3.2, 120-136) for some discussion in the linguistic literature).[26]

According to von Fintel and Gillies (2010) (and the long-standing tradition in philosophy), *must* is strong: *must p* entails *p*. This is achieved in the following fashion. *Must* universally quantifies over the epistemically possible worlds, and there is no ordering source. As a marker of epistemic necessity, *must* cannot give rise to epistemic contradictions, which correctly predicts the natural language pattern.

My goal here is not to wade into the debate on the strength of *must*, but to highlight its relevance for evidentials. Even though *must* does not allow epistemic contradictions, the Kratzerian semantics does not prohibit them. Recall from § 2.2 that Izvorski (1997) (and much later work) analyzes evidentials as universal quantifiers over the most normal of the epistemically possible worlds. This semantics predicts that epistemic contradictions are possible. In other words, the existence of non-committal uses does not require an illocutionary semantics for evidentials, because the standard modal analysis handles them as well.

Furthermore, even though *must* does not give rise to epistemic contradictions, it is compatible with the possibility of predjacent being false, as shown by Lassiter (2016) with experimental and corpus data:

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25. Yalcin's discussion focuses on *might*, not *must*.

26. The relevant contrast is illustrated below:

(i)   Epistemics

    a. #There is no life on Venus and there must be life on Venus.

    b. #Suppose there is no life on Venus and there must be life on Venus.

(ii)   Moore paradox

    a. #There is life on Venus and I don't know there is life on Venus.

    b. ✓Suppose there is life on Venus and you don't know there is life on Venus.

<div align="right">(cf. Yalcin 2007: 986, ex.14-15)</div>

(60)   They don't repaint the helmets, I don't know for sure why, but it must be too much of a hassle to do.   (Lassiter 2016: 7, ex.12)

Such examples as (60) show that *must* does not require full commitment, and thus there is some similarity between *must* and hearsay evidentials, which is another argument for entertaining the modal analysis of such cases.

Non-epistemic modals   It is possible to subsume non-committal uses under the same general umbrella as *must* using a different combination of conversational backgrounds, an idea entertained by Matthewson (2012) and Kratzer (2012: Chapter 2, 34-36) and implemented by Ehrich (2001) for German *sollen* and Faller (2011) for Quechua. Faller (2011) analyzes =*si* as an *informational* modal without an ordering source.

Informational modal base $f_{inf}(w)$ is a function that maps every world w to a set of propositions that constitute a report in w (cf. the Hintikkan semantics for 'say'):

(61)   a. $f_{inf}(w) = \{z \mid z$ is the content of what is said in $w\}$

       b. $\cap f_{inf}(w) = \{u \mid \forall z \in f_{ep}(w).u \in z\}$, the set of accessible worlds where what is said in w is true   (after (Faller 2011: 680, 39))

Then a hearsay evidential, such as =*si*, receives the following semantics:

(62)   Lexical entry for =*si*
       $[\![si]\!]^{c,w,f,g}(p) = \forall w' \in (\cap f_{inf}).p(w')$ (after (Faller 2011: 680, 40))

Here is how (2b) is interpreted using this semantics:

(63)   a.   Para-sha-n=**si**.
            rain-PROG-3-**REP**

       b. $[\![si]\!]^{c,w,f,g}(it.is.raining) = \forall w' \in (\cap f_{inf}).it.is.raining(w')$

According to the semantics in (61), the world of evaluation does not have to be part of the non-realistic modal base. Given that the content of what is said can be anything, $[\,si\ p\,] \wedge [\,\neg p\,]$ is felicitous.

2.4.2.4   Discussion

In a way, this section is an exercise on the expressive power of different formal systems. It is possible to account for non-committal readings within the illocutionary theories. It is also possible to provide a modal analysis, wherein the difference between *must* and =*si* can be parameterized within the same system by manipulating conversational backgrounds. Given

that each of the analyses handles the facts and that there is no immediate advantage of one over the other, the non-commitment of some evidentials is not a way to discriminate between different views on evidentiality as a category (pace Matthewson (2012), who regards the mere possibility of a modal analysis as evidence for the modal view).

As I already have mentioned in the beginning of the section, non-committal uses only occur with hearsay evidentials, and both approaches to non-commitment make it part of the conventional meaning of respective markers. This type of analysis is problematic for languages where the same morphology is used to convey hearsay and inferential interpretations, such as languages with evidential perfects. As illustrated by Georgian below, non-committment is only possible with the hearsay interpretation:

(64)   Georgian: Non-committal uses

    a.   *Hearsay context: There is a report that California legalized marijuana.*
        ✓kalifornia-s   k'anonier-i **gauxdia**   marihuan-is
        California-DAT legal-NOM make.3SG:S.3SG:O.**IND:PST** marijuana-GEN
        gamoq'eneba, da es   ar   aris   martal-i.
        usage.NOM   but it.NOM NEG be.3SG:S.PRES true-NOM
        'California legalized marijuana, *I hear*, but that's not true'.

    b.   *Inferential context: Because of Maria's red eyes you infer that she was crying. Then you realize that red eyes might be caused by allergy. You say:*
        #maria-s   **utiria**,   da es   ar   aris   martal-i.
        maria-DAT cry.**IND:PST** but it.NOM NEG be.3SG:S.PRES true-NOM
        Intended: 'Maria cried, *I infer*, but that's not true.'

The advantage of Izvorski's (1997) analysis is that it provides a unified semantics for both uses but it does not account for the contrast in licensing contradictions between (64a) and (64b). If non-commitment is to be encoded in semantics, one needs to postulate accidental homophony between hearsay and inferential uses of the same morpheme, cf. Şener's (2011) and Smirnova's (2012) solutions respectively for Turkish and Bulgarian, which exhibit the same pattern as Georgian.

An alternative solution would be to derive non-commitment from the pragmatics of reports. This possibility is first pointed out by AnderBois (2014), who argues that non-commitment is a variety of perspective shift, from the speaker to the original author of report. His formal proposal is a notational variant of (Murray 2010), but the paper makes an important empirical contribution.

AnderBois shows that non-commitment is a common, if not universal, feature of hearsay evidentials. As I have demonstrated, this property is not correlated with any other property discussed in the literature, such as embedding or shifting. Such readings are available for evidentials of all morphosyntactic stripes: evidential perfects in Georgian and Bulgarian, modal verb *sollen* in German, focus particle *=si* in Cuzco Quechua. However, such readings require the right pragmatic set-up.

Unless specified otherwise, hearsay evidentials are used as though the speaker endorses the truth, or at least the likelihood, of the scope proposition. The non-commitment arises only when there is an overt disagreement with the content of a report, which signals the speaker's distancing from a certain point of view. AnderBois observes that in many cases a flat out [Evp] $\wedge$ [$\neg p$] statement becomes more acceptable when distancing is emphasized via evaluative language.

The only apparent exceptions to an otherwise widespread pattern are three languages of the Pacific Northwest: Gitksan (Tsimshianic; Peterson 2010a), Nuu-chah-nulth (Wakashan; Waldie 2013), and St'át'imcets (Salish; Matthewson et al. 2007). As AnderBois points out, the contexts tested for these languages may not be empathic enough, which has the potential of blocking non-commitment.

These cases clearly call for more research. If, as the data from Gitksan, Nuu-chah-nulth and St'át'imcets suggest, non-commitment is a matter of cross-linguistic variation, it can be encoded as the difference between a cancellable implicature that p holds and an entailment. However, it may turn out that *all* hearsay evidentials exhibit the property in question.

If so, it would suggest that the proper angle to look at the semantic variation is not on a language-by-language, but on a source-by-source basis; cf. a similar remark made by Faller (2011) for inferential evidentials. It would also suggest that hearsay evidentials in some ways function as a reported speech device. The distancing effect is not unique to non-commital evidentials. For instance, Reinhart (1983) argues that a special kind of parentheticals in English express someone else's point of view which is not endorsed by the speaker. Moreover, Anand and Hacquard (2014) argue that some sort of non-commitment is inherent to speech verbs— they are claimed to never be factive. While investigating this is a matter of the future, the next section offers another connection between some hearsay evidentials and indirect discourse.

2.4.3   Quirk #2: quotative readings

2.4.3.1   The pattern

In some languages, hearsay evidentials can have what I will call quotative interpretations with questions and imperatives (I discuss other speech acts below). Such interpretations create an effect of a relayed speech act, one where the current speaker is not asking a question or issuing a command but merely reports that such a speech act was performed by a third party. Cuzco Quechua was the first language where this interpretation was discovered:

(65)   Cuzco Quechua
　　　Pi-ta=**s**　　Inés-qa　　watuku-sqa?
　　　who-acc=**SI** Inés-TOP visit-PST2

　　　(i)　　NON-SHIFTED ≈ '**Given what I heard**, who did Inés visit?' (this interpretation is
　　　　　　not discussed in the literature) **not attested**

　　　(ii)　SHIFTED ≈ '**Given what you heard**, who did Inés visit?' (Faller's comment: speaker
　　　　　　expects the addressee to base their reply on hearsay) **common**

(iii) QUOTATIVE ≈ '**Someone said**: who did Inés visit?'. (Faller's comment: speaker indicates that somebody else is asking) **rare**

(Faller 2002: 230, ex.189b; my translations)

The sentence in (65) could have at least three interpretations.

The interpretation in (65ii) is the default reading of evidentials-in-questions—evidential origo shifts to the addressee—and it is the subject of Chapter 8, which I leave aside for now.

The interpretation in (65iii) is more marginal. The literature regards it as a non-shifted parallel to (65ii), describing it as "anchored to the speaker" (Faller (2002) and subsequent literature (Murray 2010; Lim 2010; San Roque et al. (in press)). I argue that this label is misleading. A truly non-shifted reading is given in (65i). It is not attested across languages, its logical possibility is not brought up in the literature, and I discuss it in detail in Chapter 8, along with (65ii).

In this section, I focus on (65iii). While it is true that =*si* is in some way about what the speaker heard and thus is non-shifted, there is an important asymmetry between (65iii) on the one hand and (65i), (65ii) on the other:

— (65i), (65ii) are speech acts of question performed by the speaker and requesting particular actions from the addressee;

— in (65iii), the current speaker is not requesting information from the addressee but merely reports a question made by a third party.

Quotative readings are also attested with imperatives, as in the Mbyá example in (66):

(66) Mbyá (Tupi-Guaraní)
E-me'ẽ   **je**   ka'ygua chevy pe
2.IMP-give REP mate   me   to
'**Someone said:** Give me the mate!'   (Thomas 2014: 3, ex.7)

Similar to (65iii), in (66) the current speaker is not requesting actions from the addressee but merely reports a command made by a third party.

Quotative readings are typologically rare and are documented only for a handful of languages of those that have been studied in the formal semantic tradition: questions in Cuzco Quechua (Faller 2002) and Tagalog (Austronesian; Schwager 2010), imperatives in Mbyá (Tupi-Guaraní; Thomas 2014), and both questions and imperatives in Kaalallisut (Eskimo-Aleut; Bittner 2008). I am intentionally not discussing other types of speech acts. Questions and imperatives are clause types that have an explicit morphological and syntactic make-up, so it is possible to check whether an evidential can appear in such clauses. Given that assertions usually have no overt expression, it is hard to tell a 'quoted' assertion from a 'quoted' proposition. A good place to start may be languages with morphologically non-zero indicative mood, but such data are not readily available to me, as well as data on evidentials in exclamatives.

Perhaps due to their rarity, quotative readings have been somewhat marginalized in the literature. Coming up with a proper account is a challenging task for (semantic) theory, as it

needs to explain both (A) what these readings are, and (B) why they are so uncommon. In what follows, I present Faller's (2002) original illocutionary analysis and discuss alternatives, mostly drawing from (Korotkova forth).

2.4.3.2 An illocutionary analysis

Faller treats quotative readings on a par with non-commitment in declaratives: the idea is that in both of these uses the speaker just reports having witnessed a speech act by a third party, no commitments attached. The general lexical entry for $=si$ in (67, repeated from 57) captures exactly this intuition:

(67) Lexical entry for $=si$

$$\textbf{-si:} \quad \begin{matrix} \textsc{Ill}(p) \\ \textsc{sinc} = \{M(s,v)\} \end{matrix} \quad \longmapsto \quad \begin{matrix} \textbf{\textsc{Present}}(p) \\ \textsc{sinc} = \{\exists s_2(Ill(s_2,p) \land s_2 \notin \{h,s\})\} \end{matrix}$$

(Faller 2002: 234, ex.196)

(68) provides a semantics for questions, which is a modification of what is assumed by Faller's (2002) lexical entries for evidentials in questions:

(68) Semantics for questions
p
$\textsc{ill} = \textsc{Quest}_s(p)$
$\textsc{sinc} = \{Desire(s, \exists q \in Q.\textsc{Assert}_h(q))\}$
where s is the speaker, h is the addressee and Q is the answer set generated by $\textsc{Quest}$, e.g. $Q = \{p; \neg p\}$ in polar questions

In words, when asking a question, the speaker indicates a desire that the addressee assert one of the propositions in the answer set (cf. a preference semantics for questions in Condoravdi and Lauer 2012a; Lauer 2013).

(69) represents the effect of $=si$ in questions, and (70) is an application:

(69) What $=si$ does in questions

$$\begin{matrix} \textsc{Quest}(p) \\ \textsc{sinc} = \{Des(s, \exists q \in Q.\textsc{Assert}_h(q))\} \end{matrix} \quad \longmapsto \quad \begin{matrix} \textbf{\textsc{Present}}(p) \\ \textsc{sinc} = \{\exists s_2(Quest(s_2,p) \land s_2 \notin \{h,s\})\} \end{matrix}$$

(Faller 2002: 200, ex.167)

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(70) Pi-ta-**s**   Inés-qa   watuku-sqa?
      who-ACC-**SI** Inés-TOP visit-PST2

      ILL = PRESENT(p)
      SINC = $\{\exists s_2(Quest(s_2, p) \land s_2 \notin \{h, s\})\}$

<div align="right">

(Faller 2002: 230, ex.189b)

</div>

In (Korotkova forth), I re-implement Faller's semantics within a framework with speech act operators in the syntax (Krifka 2014). In my system, quotative readings arise when the evidential is adjoined to the speech act projection (ForceP). This framework has a transparent syntax-pragmatics interface, which allows to formulate explicit constraints on embedding and scope, but the core intuition remains the same: quotative readings signal that an evidential takes a speech act as its argument. As discussed below, this view is not non-problematic and more research is needed to establish how to properly account for the readings in question.

2.4.3.3   Discussion

Quotative readings are not easily amenable to a modal analysis. For instance, it is clear that modal auxiliaries do not allow them. As Faller (2007) notes, this may be the only argument (out of the ones that have been entertained so far) for genuinely illocutionary evidentials, and this diagnostic is overlooked by Matthewson (2012), who defends an exclusively modal view on evidentiality.

If quotative readings indeed deal with speech acts, this may be the only argument for having speech acts in the syntax. This is currently a matter of debate (see (Lauer 2015) for an overview). One family of approaches, mostly syntactic with the notable exception of (Krifka 2014), advocates the existence of such operators. Another family of approaches (Potts 2006; Lauer 2013) dispenses with them in favor pragmatic conventions.

However, even though analytically a speech-act treatment of quotative readings is a plausible option, there are major empirical concerns.

The first concern   is the source of variation. For Faller (2002), quotative readings are an instance of non-commitment in questions. However, if the quotative readings are rare, non-commital readings in declaratives are common, if not universal (§ 2.4.2). There are languages that allow the latter but ban the former, e.g. Bulgarian; Cheyenne (Murray 2010); Turkish. If the two readings are derived via the same mechanism, such discrepancy is not explained. The availability of illocutionary readings to evidentials only in some languages may be a case of genuine semantic variation. However, this property does not correlate with any other semantic characteristic, which is not predicted by the dichotomy view.

In (Korotkova forth), I hypothesize that the variation is rooted in the morphosyntax. A property that evidentials with quotative readings share is clitichood. Kaalallisuut =*quuq*, Tagalog *daw*, Mbyá *je* and Cuzco Quechua =*si* are all clitics that can attach to any constituent. Evidentials without quotative readings (in the sample available to me) are either modal auxiliaries with a fixed position in the spine, such as German *sollen*, or bound morphemes that are part of

e.g. tense paradigm in languages like Georgian or illocutionary mood paradigm in Cheyenne. It may be the case that evidential clitics have more scopal freedom that allows them to scope over illocutionary operators. At this point this is a mere speculation that needs to be tested. In particular, positional effects on the interpretation of evidentials should be checked.

The second concern is the unclear semantic status of quotative readings. The existing analyses treat 'quoted' imperatives and questions as embedded speech acts because the current speaker does not have to express a preference such that the command be fulfilled or the question be answered. However, it is not clear whether (a) the speaker may have such a preference, and (b) whether a third party to whom the initial speech act is attributed has such preference at the moment of utterance, and not just at some previous moment. An active preference of this sort is what makes a speech act, and its absence would indicate that quotative evidentials do not deal with communicative intentions.

Quotative readings reproduce some previous discourse. Therefore, they should be investigated in a broader context of reported speech mechanisms, which form a continuum within and across languages.

At one end, there is direct discourse as in *Jay said: Wow!*. It is characterized by (i) syntactic opacity (no cross-clausal dependencies), (ii) verbatim status of the report, and (iii) insensitivity to content to the extent that it may be non-linguistic, such as an interjection. It is also notoriously hard to formalize (Banfield 1973; Partee 1973). Quotation should be compatible with just about anything. If quotative evidentials were an instance of *bona fide* quotation, it would be then surprising that they differ in which speech acts they take.

At the other end, there is *bona fide* indirect discourse perfomed by speech verbs such as 'say' and 'tell', as in *Jay said that it was cool*. This strategy is characterized by (i) syntactic transparency, (ii) non-verbatim reports that are not faithful to the form of the initial utterance, and (iii) requirement that the content be linguistic, i.e. *Jay said that wow* is out. Semantic research on speech reports is usually embedded into theorizing about attitudes in general. Different attitude verbs and attitudinal operators take different complements across languages, in particular, only some languages have embedded imperatives (Kaufmann 2014). If quotative evidentials constitute attitudinal constructions, it would be then not surprising that they differ in which speech acts they embed.

In between, there are various mixed strategies that may, for instance, allow some but not all cross-clausal dependencies and ban interjections. Some languages have been argued to only have mixed strategies instead of the sharp opposition between direct and indirect discourse, e.g. Matses (Munro, Ludwig, Sauerland, and Fleck 2012) and Japanese (Sauerland and Yatsushiro 2014). In other languages, different strategies co-exist with others. One example of a mixed strategy is Free Inidrect Discourse, a narrative technique used for conveying thoughts of the protagonist (see (Eckardt 2014) and references therein). Another example of a mixed strategy comes from the so-called quotative particles. I use the term loosely as it is somewhat of a grab bag, typically covering borderline complementizer elements.

Japanese particles are often used as markers of direct quotation with speech verbs (71a)[27],

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27. They may also function as complementizers outside of direct quotation environments.

and if the original sayer is recoverable from context, the matrix clause may be omitted (71b):[28]

(71) Japanese: quotative particles

   a. Matrix clause present:
      < cheese-wa suki (ka) > **tte**   John-ga   kiita
      < cheese-TOP like (Q) > **QUOT** John-NOM asked
      'John told me to ask you whether you like cheese; literally: John asked: Do you like cheese?'.

   b. Matrix clause omitted:
      < John-ga   cheese-wa suki (ka) > **datte**
      < John-NOM cheese-TOP like (Q) > **QUOT**
      'Someone said: Do you like cheese?'.

At least for some speakers, it is also possible to omit the matrix clause with interjections (72a) and exclamations (72b):

(72) a. < itai   > **to**
        < ouch > **QUOT**
        'Someone said: Ouch.'

     b. < omae baka > **datte**
        < you   idiot > **QUOT**
        'Someone said: You idiot.'

Generally, the place of quotative and non-quotative uses of hearsay evidentials in the overall landscape of reported speech is unknown. Aikhenvald (2006) notes that one difference between hearsay evidentials and reported speech is that with evidentials, the source of report is unknown. Kaufmann shows in (Schwager 2010) that the opposite holds in Tagalog. While *daw* does not require the source to be known, it may be recoverable from context or even explicitly mentioned.

Specifically, superficial similarities between quotative particles and quotative evidentials warrant a detailed comparison. For instance, it is interesting to check whether quotative evidentials, too, can be about non-linguistic content similar to (72b). However, both categories are understudied within formal semantics and philosophy of language. There are many more questions to investigate, such as (i) whether one or both allow 'de re' construal, or (ii) whether the report must be verbatim. Answering these questions, with an eye on the types of quotation (Capellen and Lepore 1997, 2003, 2012; Maier 2014b, 2015a), will advance a better understanding of each of the categories and of the relation between them.

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28. The examples in (71)-(72) use angle bracket to visualize the content of a report. I do not use square brackets to make the representation syntax-neutral.

2.4.4 Recap

This section looked at two cases that have been used to motivate a Faller-type analysis for some hearsay evidentials and, consequently, the dichotomy view on evidentiality.

The first case, non-committal readings in declaratives, does not lend support to the dichotomy view. Such readings are more pervasive than it was thought initially, and there is a way to formalize them in each type of approach: (a) either as making a special type of speech act, as per (Faller 2002) (or a near-complete assertion, as per Murray (2010)), (b) or as a Kratzerian modal that differs from *must* in the choice of conversational backgrounds, e.g. a modal with a non-realistic modal base and no ordering source, as per Faller (2011). This case then is not instrumental in deciding on the right theory on evidentiality as a category.

The second case, quotative readings in questions and imperatives, lends support to the idea that *some* evidentals require an illocutionary analysis, in particular, because these evidentials are not easily analyzed as modals. However, the empirical evidence is inconclusive and more research is needed (a) to understand the source of cross-linguistic variation, (b) to show that such evidentials truly deal with speech acts made by others, and (c) to determine the relation between quotative evidentials and other strategies of quotation and indirect discourse. Furthermore, whatever the right view turns out to be, it would tell little about how to analyze other, less marginal, evidentials. Therefore, this case is not instrumental either in deciding on the right theory on evidentiality as a category.

I want to conclude with a methodological remark. This section, as emphasized throughout, is devoted to special uses that only hearsay evidentials have. These uses have been used as an empirical argument for treating *all* evidentials in some languages as illocutionary.

The background assumption in the literature is that evidentials that form a morphological paradigm are of the same semantic class. The conjecture is as follows: given that some evidentials are illocutionary and given that all evidentials are part of the same paradigm, all evidentials are illocutionary.

The background assumption is wrong: morphology and semantics do not always line up. For instance, future in many languages it is morphologically part of the tense paradigm. At the same time, there are many semantic asymmetries between future and other tenses, which motivates a modal analysis of the former. Generally, morphemes may compete for the same slot without belonging to the same category, as e.g. person and number in Georgian. The opposite is also true: elements that have a unified semantics do not have to belong to the same morpho-syntactic category. The bottom line is that even if some evidentials warrant a particular analysis, said analysis does not transfer automatically to other evidentials of the same morphological class.

2.5 General discussion

This chapter surveys the formal semantic landscape of evidentiality, which is largely dominated by the debate on the relation between evidentiality and epistemic modality. Modal approaches advance the typological tradition, which does not always recognize evidentiality as a sepa-

rate category. Illocutionary approaches emerged as a response. Below I discuss overarching problems that much work on evidentiality shares.

One major source of confusion is that when talking about epistemic modals, one particular manifestation, English *must*, and one particular analysis thereof, the Kratzerian semantics, have been taken as a baseline.

For instance, Faller's (2002) seminal work is, in a way, a fastidious reflection on the fact that Cuzco Quechua evidential enclitics do not, prima facie, resemble modals as we know them. Namely, many of the traits of =*mi,* =*si* and =*cha* from (2) do not pattern with those of *must* and *might*.

Problems with the illocutionary view

There is still little understanding of the repertoire of speech act modification in natural language and there is no sound non-negative procedure that would identify a speech act modifier.

Moreover, it turns out that many properties that initially motivated the illocutionary analysis can be reformulated without making reference to speech acts, as in the case of non-committal evidentials in § 2.4.2. Therefore, appealing to the semantic heterogeneity does not explain the actual variation, which renders the dichotomy view unjustified, as per Matthewson (2012). However, it does not yet show that all evidentials are modal. It demonstrates the lack of tools that would diagnose illocutionary evidentials.

Putative evidence pro illocutionary evidentials comes from cases discussed in § 2.4.3, quotative readings. But such readings are limited to a particular class of evidentials and a specific kind of scenarios, so the empirical picture is incomplete.

More evidence may come from the distinction overlooked in the literature on evidentiality: that between private beliefs and discourse commitments. First introduced by Gunlogson (2003) for English rising declaratives, discourse commitments deal with what interlocutors have publicly admitted to. Commitments don't require belief, and may be just assumed to hold for the sake of conversation. The notion of commitments plays a crucial role in several approaches to speech acts (see Lauer 2013 and references therein). Modals, on the other hand, usually deal with beliefs. The empirical differences between beliefs and commitments are subtle. Below I provide a contrast that may serve as a guiding parallel in future work on evidentiality.

Imperatives are clause types that denote various flavors of command, advice, permission and suggestion. Across these uses, they share the speaker's endorsement of the sentence radical: all things being equal, the speaker prefers the world in which the content of an imperative is realized, cf. preference semantics for imperatives (Condoravdi and Lauer 2012b; Starr 2013).

In many ways, imperatives are similar to deontic modals, and (73a) and (73b) seem to express the same thing:

(73)   a.   Deontic *should*:
            You should get more sleep.

       b.   Imperative clause:

Get more sleep.

Such similarities gave rise to a modal analysis of imperatives (Kaufmann and Schwager 2009; Kaufmann 2012); see (Charlow 2014) for alternatives.

However, deontics and imperatives do not always pattern together. In conditional consequents, only imperatives but not modals require conditional endorsement:

(74) *Context: We are planning a dinner after a workshop. Sven has suggested that we have it at his small apartment.*

    CLEO.But if you want to have a dinner at your place, you have to / should / need to move to a bigger place before the workshop happens.
    Her goal could be:
    — inform Sven of what he needs to do to optimally realize his preference
    — or make Sven give up his preference

    SVEN.Okay, I've been thinking of moving anyways.

    CLEO.That is not what I meant: I wanted to convince you that you should not have a party at your place.

                    (Lauer and Condoravdi 2016: ex.30)

With a modal in (74), endorsement is not required and Cleo can come back saying that in fact her goal was not to outline a way to achieve Sven's preference, but to make him give it up. Imperatives behave differently:

(75) *Context: We are planning a dinner after a workshop. Sven has suggested that we have it at his small apartment.*

    CLEO.But if you want to have a dinner at your place, move to a bigger place before the workshop happens.

    SVEN.Okay, I've been thinking of moving anyways.

    CLEO.#That is not what I meant: I wanted to convince you that you should not have a party at your place.   (Lauer and Condoravdi 2016: ex.31)

With an imperative in (75), Cleo has to endorse Sven's moving. She cannot come back saying that her goal was to change his mind. To sum up, the difference between (75) and (74) boils down precisely to the presence/absence of commitment.

Even though finding scenarios that will reveal the presence/absence of a discourse commitment may prove tricky, this avenue has the potential of resolving the modal-illocutionary debate for evidentials.

Problems with the modal view

The literature offers two different strategies of establishing whether or not a given evidential element is modal. Each one raises concerns.

The first strategy   is empirical, via comparison with English *must* and *might* along several parameters. This is the point of departure of (Faller 2002, 2011).

Using *must* as a baseline for epistemic modality poses the risk of mistaking syntax for semantics. English modal auxiliaries have some properties—e.g. lack of interaction with tense—that are certainly not due to semantics, and are not even shared by their relatives across Germanic.

Moreover, languages have many other means to express modality (Arregui, Salanova, and Rivero forth), which exhibit semantic properties not shown by auxiliaries, e.g. gradability of modal adjectives such as *probable* (Lassiter 2011, 2014) and of lexical expressions such as *70% chance that* (Swanson 2011).

Or take modal adverbs. *Perhaps* talks about likelihood and therefore is modal-ish. But it also belongs to the class of "high" adverbs—together with *sincerely*, which talks about communicative intentions and therefore is speech-act-y. It is then unclear whether *perhaps* should be classified as modal or as illocutionary, and the relation between these elements and evidentiality is yet to be established.

If differences between the two classes are hard to pin down, one might as well treat all evidentials as illocutionary. Given that there is no evidence for the dichotomy, the one class that there is can be either modal or illocutionary. As I will argue in the chapters to come, none of the explored aspects of evidentiality requires an exclusively modal analysis that cannot be recast in illocutionary terms (pace Matthewson 2012).

The second strategy   is theoretical, and proceeds by probing whether the semantics of an element can be formulated within the formal apparatus of (Kratzer 1981, 1991, 2012), which is often taken as a baseline semantics for modals and hence is the Canon, as von Fintel and Gillies (2011) dub it. This is the point of departure of Matthewson (2012). The Kratzerian framework is able to accommodate a lot of natural language phenomena dealing with intensional quantification and provides a lot of combinatorial options with respect to choosing the right conversational backgrounds. Classifying evidentials as modals based on this criterion is akin to classifying attitude verbs as modal (see e.g. (Hacquard 2013) for discussion). And while indeed e.g. *must* and *imagine* are parallel in some ways, a more fine-grained definition is needed to reflect a deeper level of similarity between e.g. *must* and *have to*.

In Chapter 6, I offer a **route to reconciliation** of different views on what makes an epistemic modal, which in turn helps establish whether evidentials are part of the same class.

Epistemic modals as a semantic category exhibit the property of judge-dependence (the term is due to Lasersohn (2005) and is used here descriptively). Even in root declarative clauses, it is not straightforward whose body of knowledge a modal is after. This gives rise to complicated patterns related e.g. to (dis)agreement about modal claims and retraction of

claims made earlier. These complicated patterns, in turn, give rise to a debate on the proper semantics for epistemics (and predicates of taste, which, too, exhibit the patterns).

Evidentials, on the other hand, are not judge-dependent, and in root declarative clauses are always anchored to the speaker. I take this property as an argument against the view that equates epistemic modality and evidentiality. In the course of the following chapters, I argue that currently available diagnostics do not show whether evidentials are modal, or non-modal, or illocutionary, and develop a semantics for evidentials that does not resolve the modal-illocutionary debate.

CHAPTER 3

The embedding puzzle

Abstract: Languages vary in whether evidentials can appear in attitudinal complements. In some languages, e.g. Georgian (South Caucasian; Boeder 2000), syntactic embedding of evidentials is possible, while in some others, e.g. Abkhaz (Northwest Caucasian; Chirikba 2003), it is not. The literature takes the (non-)embeddability as confirming the dichotomy view on evidentiality, according to which some evidentials are akin to epistemic modals and some are illocutionary operators. The claims range from "Non-embeddable evidentials have to be illocutionary" to "Embeddable evidentials have to be modal". The chapter argues against this view. I show that while (non-)embeddability is indeed a matter of cross-linguistic variation, it is not a case of genuine semantic variation in evidentiality. Drawing on data from Turkish, I propose that restrictions on embedding of evidentials result from the interaction of their morphosyntactic category with the availability of respective embedders in a given language. The variation is thus reducible to factors independent of evidentiality. These facts can be handled by *any* analysis of evidentiality and thus do not resolve the modal-illocutionary debate.

3.1 Empirical landscape

Recall from Table 1.2 in chapter 1 that embedding under attitudes is a parameter of cross-linguistic variation in evidentials. In some languages, evidentials do not appear in the complements of propositional attitude predicates.[29] Consider a minimal triad from Cuzco Quechua below:

(76) Cuzco Quechua (Quechuan)

    a. Root declarative clause with an evidential
       xuan=**mi** hamu-n
       Juan=DIR come-3SG
       '*Surely* Juan comes'.   (adapted from Lefebvre and Muysken 1987: 19, ex.16b)

    b. Complement clause without an evidential
       [xuan hamu-sqa-n-ta   ] yacha-ni
       [Juan come-NMLZ-3SG-ACC] know-1SG
       'I know that Juan comes'.

    c. Complement clause with an evidential
       *[xuan=**mi** hamu-sqa-n-ta   ] yacha-ni
       [Juan=DIR come-NMLZ-3SG-ACC] know-1SG
       Intended: 'I know that *surely* Juan comes'.
                    (adapted from Lefebvre and Muysken 1987: 19, ex.16b)

As illustrated in (76) above, direct evidential =*mi* embedded under 'know' results in ungrammaticality (76c). A non-evidential version of the same sentence is fine (76b). Evidential clitics in Cuzco Quechua and other Quechuan can attach not just to the verb but to any constituent (76a), so it is not the placement of *-mi* that rules (76c) out. The same situation vis-a-vis embedding evidentials holds in at least the following languages: Abkhaz (Northwest Caucasian; Chirikba 2003); Cheyenne (Algonquian; Murray 2010, Murray forth.); Eastern Pomo (Hokan; McLendon 2003); Jarawara (Arawá; Dixon 2003); Maricopa (Yuman; Aikhenvald 2004); Quechuan languages, e.g. Cuzco Quechua (Lefebvre and Muysken 1987; Faller 2002) and Imbabura Quichua (Korotkova 2013); Tariana (North Arawak; Aikhenvald 2004); Tukano (East Tucanoan; Aikhenvald 2004).

However, the non-embeddability constraint is not universal. Consider an example from Georgian below:

(77) Georgian (South Caucasian)

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29. Repeating from Chapter 1: Here and elsewhere the term *attitude reports* is used to cover *attitude reports* (complements of e.g. *think*) as well as *speech reports* (complements of e.g. *say*), as in e.g. (Schlenker 1999).

a. Root declarative clause with an evidential
    mama mis c'odn-**ia**   xuti ena
    father her know.3SG.S-**IND.PST** five language
    '*Apparently* her father knew five languages'.

b. Complement clause without an evidential
    maria pikrobs   [rom   mama-m   mis-ma ic'oda   xuti
    Maria think.3SG.S:PRS [COMP father-ERG her-ERG know:3SG.S:AOR five
    ena   ]
    language]
    'Maria thinks that her father knew five languages'.

c. Complement clause with an evidential
    maria pikrobs   [rom   mama mis c'odn-**ia**   xuti ena   ]
    Maria think.3SG.S:PRS [COMP father her know.3SG.S-**IND.PST** five language]
    'Maria thinks that *apparently* her father knew five languages'.

In Georgian, complements with (77c) and without an evidential (77b) are equally good.[30] There exist a fair number of other languages (genetically and geographically unrelated, just like in the case of non-embedding) that allow evidentials in attitudinal complements: Bulgarian (South Slavic; Sauerland and Schenner 2007; Koev 2011); Georgian (South Caucasian; Boeder 2000; Giacalone Ramat and Topadze 2007); German (Germanic; Schenner 2010b,a; Faller 2007); Japanese; Korean (Lee 2013, though Lim 2010); Standard Tibetan (Tibeto-Burman; Garrett 2001); St'át'imcets (Salish; Matthewson et al. 2007); Tagalog (Austronesian; Schwager 2010); Turkish (Turkic; Schenner 2010b; Şener 2011); Zazaki (Iranian; Gajewski 2005).

In this chapter, I address the difference in the behavior of Quechua-type evidentials on the one hand and Georgian-type on the other.

The literature gives various semantic explanations to the pattern. It has been argued that the lack of embedding is a one-way test and that the non-embeddability of Quechua evidentials is due to their illocutionary nature (Faller 2002). It has also been argued that the possibility of embedding is a one-way test and that the embeddability of evidentials in languages like St'át'imcets is indicative of their modal nature (Matthewson 2012). Sometimes an even stronger claim is made (Garrett 2001; Murray 2010). It has been argued that the (non-)embeddability marks the divide between illocutionary and modal evidentials, and therefore can be used as a two-way empirical diagnostic for the semantic status of respective markers.

I argue that, in and of itself, the (non-)embeddability does not bear on the putative modal-illocutionary divide. The binary distinction between embeddable vs. non-embeddable evidentials does not map onto any semantic distinctions. For instance, regardless of their (non-)embeddability, evidentials resist denials in dialogues (Chapter 4) and shift in questions (Chapter 8), which is indicative of their fundamental sameness; see discussion in §2.4.

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30. The difference in case marking between (77b) and (77c) are due to the aspect-based split ergativity that affects morphology but not syntax, see e.g. Harris (1981).

I will propose, based on data from Turkish, that the non-embeddability depends on the interplay of (a) the moprhosyntactic category of an evidential and (b) complementation strategies available in a given language. In Turkish, evidentials are a part of the tense system. They can appear in different types of tensed complements but are banned from nominalizations (which don't host tense in the language), and it is thus the shape of the complement that has an impact on embedding of evidentials. These facts do not exclusively speak for a modal or an illocutionary approach, as they are compatible with each of the analyses.

The Turkish pattern serves as a window on the cross-linguistic variation. Evidential markers across languages belong to different morphosyntactic categories: tense, clause typing, auxiliaries, focus particles. It is thus only natural to expect that their moprhosyntax would to some extent determine which types of structures different evidentials can appear in. For instance, Quechua languages lack finite complementation altogether and only have nominalized complements. As evidenced by (76c) above, the latter cannot contain evidentials in Quechua. I argue that it is not a property of Quechua evidentials that they cannot be syntactically embedded, rather it is a property of these languages that they lack the right kind of embedding for evidentials to appear in. These facts agree with the Evidential Domain Hypothesis (Blain and Déchaine 2006) and are compatible with a variety of semantic analyses of evidentiality. For instance, they leave the possibility open that there is a semantic restriction on which elements can appear in which kind of structures (cf. Moulton 2009). The major take-home message of this chapter is as follows: the variation in the possibility of embedding does not bear on the question of semantic *heterogeneity* in evidentials, because it does not detect any.

That being said, it is the distribution of evidentials across different embedding predicates that has the potential to resolve the modal-illocutionary debate. Attitude predicates differ in what can go under them and in the shape of their complements. In particular, it is known that the limited distribution in embedded environments can be driven by semantic constraints, as is the case with e.g. epistemic modals (Anand and Hacquard 2013). It is therefore instrumental to look at which attitude predicates embed which evidentials in which languages and to investigate their differentiated embeddability. The already known differences between the embedding profile of speech-act material on the one hand, and of epistemics on the other, should be used as a benchmark which can provide important information about the syntax and semantics of evidentiality. While leaving these issues for future research, I lay out the groundwork in § 3.5.

The narrative proceeds as follows. § 3.2 makes preliminary remarks and details the current views on the (non-)embeddability. § 3.3 presents the core data on the distribution of embedded evidentials in Turkish. Section § 3.4 spells out my proposal. Section § 3.5 concludes.

3.2   Background

3.2.1   Preliminary remarks

To re-iterate the point already made earlier in the dissertation, here and elsewhere embedding stands for *syntactic embedding* exclusively, and thus refers to configurations like the following one:

(78) [$_{CP}$ … attitude verb … [$_{CP}$ … **Ev** … p …]]

As indicated by the translation, embedded evidentials always take scope in the complement clause. This is illustrated with (79, repeated from 77c):

(79) Georgian
maria pikrobs   [rom   mama mis c'odn-**ia**   xuti ena   ]
Maria think.3SG.S:PRS [COMP father her know.3SG.S-**IND.PST** five language]
$p =$ 'Her father knew five languages'

  (i) $\neq$ [$_{CP}$ **APPARENTLY** Maria thinks [$_{CP}$ p]] **wide scope**

  (ii) $=$ [$_{CP}$ Maria thinks [$_{CP}$ **APPARENTLY** p]] **narrow scope**

The same pattern holds in other languages with embeddable evidentials: evidentials take surface scope. For the sake of simplicity, the translations in this chapter do not differentiate between speaker-oriented readings of embedded evidentials and their shifted readings, i.e. when they are oriented towards the attitude holder. This is the subject of chapter 7.

One should not be led astray by the form. There is always a worry that what looks like clausal embedding may in fact be an instance of parenthesis, as in *It is midnight, Jane said*, or quotation, as in *Jane said: "It is midnight"*. There is a number of ways to identify clausal embedding, e.g. *wh*-extraction, semantic operations such as variable binding and NPI-licensing, or possibility of *de re* construal, see Munro et al. (2012) for an overview. Consider the following minimal modification of (77c):

(80) Variable binding
aravin$_i$ pikrobs   [rom   **mama mis**$_i$ c'odn-**ia**   xuti
nobody think:3SG.S:PRES [COMP father his/her know.3SG.S-**IND.PST** five
ena   ]
language]
'Nobody$_i$ thinks that his/her$_i$ father *apparently* knew five languages'.

In (80), a quantifier, 'nobody', can bind into the clause containing the evidential. Unlike universal quantifiers such as *each*, negative quantifiers are not subject to *telescoping*, a class of cross-sentential anaphora (Roberts 1989), so it is a case of genuine embedding.[31] Similar results hold for other languages with embeddable evidentials.

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31. Telescoping is possible with universal quantifiers, but not with negative ones:

(i) a. [Every chess set]$_i$ comes with a spare pawn. It$_i$ is taped to the top of the box.

((Roberts 1989: 717, ex.35) from (Sells 1985))

   b. #[No chess set]$_i$ comes with a spare pawn. It$_i$ is taped to the top of the box.

3.2.2 Previous approaches

This section unpacks predictions and assumptions made in the literature regarding the non-embeddability of evidentials.

3.2.2.1 Empirical problems

According to the dichotomy view on evidentiality (Faller 2007; Matthewson et al. 2007), cross-linguistic variation in evidentiality can be reduced to the underlying semantic distinction between illocutionary and modal evidentials. As discussed in § 2.4, this view also suggests that there *is* semantic variation in evidentiality in the first place, and this is a controversial premise. But even apart from that, the observed variation is not unidimensional and as such is not easily reducible to one parameter, however construed. In particular, the non-embeddability does not map onto other properties that have been argued to differentiate between the two classes.

As discussed in § 2.4.3, quotative readings of evidentials may be the only argument for treating some hearsay evidentials as illocutionary. Even so, the set of languages where such readings are possible is not the same as the set of languages that disallow embedding. On the one hand, there is Tagalog that allows both quotative readings (81) and embedding (82):

(81) Tagalog: quotative use of *daw* with an imperative
Kumain (ka) daw.
eat.INF (you) REP
'Someone said: Eat!'. (adapted from Schwager 2010: 233, ex.18)

(82) Tagalog: embedding
Aalam akong [nasa Oslo **daw** si Anna]
know I.LK [in Oslo REP DEF.NOM Anna]
'I know that *reportedly* Anna is in Oslo' (Schwager 2010: 239, ex.46b)

On the other hand, there is Cheyenne, that disallows both. (83) shows that the quotative interpretation is not available in questions (the sentence itself is well-formed and has other interpretations, now irrelevant; see Chapter 8). As for embedding, Murray (forth.) (see also Murray 2010) claims that Cheyenne evidentials are banned from all subordinate structures, including both complements and adverbial clauses. She only exemplifies the latter, reproduced in (84) (the same example with an evidential is possible; (Murray forth.: 7, ex.6b):

(83) Cheyenne: questions
tóne'še é-ho'eohtse-**sėstse**
when 3-arrive-REP.**3SG**
#'Someone asked: When did he arrive?' (adapted from Murray 2010: 75, ex.3.50)

(84) Cheyenne: embedding
      *[tsé-h-néméné-**sèstse**-se   ] ná-vé'šé-pèhéve-tanó-otse-∅
      [IND-PST-sing-**REP.3SG**-CNJ.3SG] 1-INSTR-good-feel-result-DIR
      Intended: 'It made me happy when he reportedly sang '   ([Murray forth.: 8, ex.7a])

The discrepancy between Cheyenne and Tagalog shows that the dichotomy view does not adequately predict the variation. It is summarized in Table 3.1 below (a shortened version of Table 1.2):

Table 3.1: Embedding in attitudes and quotative readings

	Cheyenne	Quechua	Georgian	Tagalog	Tibetan	Turkish
1. Embedding in attitudes	☹	☹	✓	✓	✓	✓
4. Quotative readings	☹	✓	☹	✓	☹	☹

Data sources: Georgian, Turkish: own data; Cheyenne: ([Murray 2010]);
Cuzco Quechua: ([Faller 2002]); Tagalog: ([Schwager 2010]); Tibetan: ([Garrett 2001])

3.2.2.2   Conceptual considerations

In the semantic literature on evidentiality ([Faller 2002, 2007]; [Garrett 2001]; [Matthewson et al. 2007]; [Matthewson 2012]; [Murray 2010]), the prevalent perspective on the non-embeddability is that it is somehow indicative of the semantic status of an element in question.[32] It is further argued that the (non-)embeddability can be used as a diagnostics distinguishing between illocutionary and non-illocutionary evidentials.[33] Below I show that the possibility of syntactic embedding does not have do with a particular semantic status.

Illocutionary ≠ non-embeddable   It is not a given that illocutionary material is limited to the root level. For instance, there is a growing body of evidence that clause types that have been traditionally associated with certain types of illocutionary force can appear in embedded positions, e.g.(a) *exclamatives*, a clause type for violated expectations ([Zanuttini and Portner]

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32. The idea dates back to [Lyons] ([1977a]), who argues that epistemic modality is non-embeddable by virtue of its special commentary status; see [Hacquard and Wellwood] ([2012]) for a recent discussion and corpus data that clearly show that epistemics do embed under attitudes.
33. Different terminology is used: ([Faller 2002]), calls embeddable elements *descriptive*, [Papafragou] ([2000, 2006]) dubs them *objective,* and for [Matthewson] ([2012]) embeddability is a sign of contributing to the propositional content.

2003), or (b) *imperatives*, a clause type for various commands (see (Kaufmann 2014; Stegovec and Kaufmann 2015) for a cross-linguistic perspective). Consider an example of the latter below:

(85) Slovenian (South Slavic)

Markota$_i$	sem	rekel,	da	**pokliči**	t_i
Marco:ACC	did	say:MASC.SG	COMP	**call:IMP.2SG**	

'It was Marko that I said you should call!', literally: 'It is Marco I said that call!'

<div align="right">(Stegovec and Kaufmann 2015: 623, ex.4)</div>

Slovenian has dedicated imperative morphology, and in (85) an imperative form is used in the embedded clause, as evidenced by focus movement.

There is a natural connection to the research on the syntax of the left periphery (see (Haegeman 2012: §1, 3-52) for an overview), according to which speech act material is located in the top layers of the clausal spine. There exist several implementations of this view, e.g. in Rizzi's (1997) original paper the structure looks as follows:

(86) ForceP > (TopP) > FocP > (TopP) > FinP > IP

ForceP hosts speech act operators that determine the illocutionary force of an utterance, TopP and FocP are for topic and focus, and FinP is responsible for finiteness. Consequently, embedding speech-act material is not excluded *per se*: it is possible under the right type of embedder, such that it would have enough structural space to accommodate higher projections.

Krifka (2014) provides a compositional semantics for the syntax outlined above. In (Korotkova ming), I extend this view to evidentials by re-implementing Faller's (2002) system within Krifka's framework. Some evidentials are treated as functions from speech acts to speech acts, and resulting sentences are of the same type as other speech acts. Consequently, embedders that can take plain speech acts as their arguments are equally able to embed speech acts with evidentials. Such embedders are discussed in greater detail in §3.4.2 in connection to embedded root phenomena.

Embeddable ≠ modal There is no evidence supporting the idea that embeddable evidentials are necessarily modal (pace Matthewson 2012). This idea comes from the universe wherein "modal" is the only alternative to "illocutionary", while in fact there are other ways to formalize the semantics of evidentials outside of those frameworks. Furthermore, being embeddable under attitudes is in no way unique to modality. Even if *embedding* is understood as *semantic embedding* (something often done in the literature), being able to scopally interact with an attitude verb is not unique modality—it is the default behavior expected of any element. Therefore, the very possibillity of embedding does not indicate that an element in question is modal.

Throughout the dissertation, I show that the existing approaches to evidentiality often leaves undefined the very core notions, such as modal-hood and speech-act-hood. As a re-

sult, many empirical tests do not in fact diagnose belonging to one class or to another. The case in point is (non-)embeddability.

Sometimes it is argued that dealing with speech acts entails being non-embeddable. However, this argument is mostly conceptual as there is no empirical evidence to support this idea. Therefore, the existence of embeddable illocutionary evidentials should not be ruled out. Sometimes a similar claim is made: being embeddable entails being modal. However, even the most generous understanding of modality as any intensional quantification does not cover all elements that occur under attitudes. Therefore, the discussion of embedding only highlights that there is a need for better tests and shows that embedding itself is not such a test.

3.3   A case study from Turkish

This section provides the core data on the behavior of evidentials in attitudes in Turkish. I start with a brief description of major complementation strategies, and then show how evidentials are distributed across these strategies. The main generalization is as follows: evidentials can only appear in tensed complements and are banned from nominalizations.

3.3.1   Complementation strategies

As any Turkic language, Turkish has a variety of productive complementation strategies (George and Kornfilt 1981). Table 3.2 introduces the ones I talk about in this chapter:[34]

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34. I will not discuss subjunctive nominalzations, which are restricted to the complements of verbs of desire such as 'want'. In terms of surface syntax, they pattern with indicative nominalizations. I also will not discuss clauses headed by *ki*. This strategy is borrowed from Persian (Kornfilt 1997, 2007), where *ki* is a default *that*-complementizer, cf. e.g. Persian and Digor Ossetic *ke* and Zazaki *kɛ*. As argued by Kerslake (2007); Griffiths and Güneş (2014), *ki*-clauses are best analyzed as parentheticals rather than complements. One of the reasons is word order: in a consistently verb-final language, complements precede the verb, but *ki*-clauses follow it.

Table 3.2: Turkish complementation strategies

		Predicates
Tensed complements	subject$_{NOM}$	**restricted to verbs of speech and mental attitude:** *demek* 'say', *söylemek* 'say', *sanmak* 'think', *ummak* 'hope', …
	subject$_{ACC}$	**restricted to verbs of mental attitude:** *sanmak* 'think', *ummak* 'hope', …
Indicative nominalizations		**default strategy:** *bulmak* 'find out', *söylemek* 'say', *sanmak* 'think', *ummak* 'hope', …

Tensed clauses with nominative subjects This complementation strategy is the closest counterpart of *that*-clauses in the more familiar languages. In terms of external syntax, the complement behaves as an object and precedes the verb (unless moved). The internal syntax is the same as in root clauses: (a) verb-final word order, (b) nominative-accusative case alignment, (c) full range of verbal morphology, including tense and agreement. The strategy is exemplified in (87) below:

(87) Natasha [sen gel-di-n] san-iyor
Natasha [you.**NOM** come-**PST-2SG**] believe-PROG
'Natasha believes that you came.'

Turkish also has a complementizer *diye* (< *demek* 'say') exemplified below:

(88) Natasha [sen gel-di-n diye] düşün-üyor
Natasha [you.**NOM** come-**PST-2SG** COMP] think-PROG
'Natasha think that you came.'

In English, many clause-taking verbs require the presence of *that*, while some, e.g. *say* and *think*, allow complementizer omission (Erteshik 1973; Snyder 1992). The situation in Turkish is different. Some verbs, e.g. *bilmek* 'think/know', exhibit variability. Some verbs, e.g. *duymak* 'hear', require the presence of *diye*. Some verbs generally dislike the complementizer, e.g. *demek* 'say', though may allow it under special syntactic circumstances.

Even though *say*-complementizers are common across Turkic, cf. Uyghur *dip* and Tatar *diep*, the behavior of *diye* is somewhat a grey area. Its distribution is governed by a set of semantic and syntactic constraints (e.g. speech verbs allow *diye* when the complement linearly follows the verb), and it may make a semantic contribution to the entire attitude report (cf. also *say*-complementizers in Abe (Kwa); Koopman and Sportiche 1989); see Özyildiz (2016) for a detailed description.

With *diye* or without, tensed complement clauses instantiate genuine subordination, as evidenced by the examples below:

(89)   *Wh*in-situ interpreted as a matrix question

   a.   Finite clause with *diye*
        Ben [Beste kim-i   sev-ioyr   diye   ] düşün-üyor
        Ben [Beste who-ACC like-PROG COMP] think-PROG
        'Who$_i$ does Ben think that Beste likes t_i?'

   b.   Bare finite clause
        Ben [Beste kim-i   sev-iyor   ] di-yor
        Ben [Beste who-ACC like-PROG] say-PROG
        'Who$_i$ does Ben say that Beste likes t_i?'

(90)   *de re* construal
       Context: Under questionable circumstances, Ben sees a guy on the beach. He thinks this guy is a spy, but he does not who he is. We know that the guy is Ortcutt.

   a.   Finite clause with *diye*
        Ben [Ortcutt bir   casus diye   ] düşün-üyor
        Ben [Ortcutt INDEF spy   COMP] think-PROG
        'Ben thinks that Ortcutt is a spy.'

   b.   Bare finite clause
        Ben [Ortcutt bir   casus] san-ıyor
        Ben [Ortcutt INDEF spy   ] believe-PROG
        'Ben believe that Ortcutt is a spy.'

(89) demonstrates that sentences with *wh*-phrases in-situ can be interpreted as matrix questions, which would be out if such clauses were quotation (cf. the ungrammatical **Who$_i$ did Ben say: 'I like t_i'*). Likewise, (90) illustrates that Ortcutt can be construed *de re*, which, too, would be impossible in case of quotation (cf. the ungrammatical **Ben said: 'Ortcutt is a spy'* in case Ben does not know the name of the guy in question).

Tensed clauses with accusative subjects   This complementation strategy is reminiscent of English ECM constructions, and it available to various predicates of mental attitude, such as 'hope', 'think', 'remember' and so on. Essentially, this is a subset of predicates that take complements with nominative subjects, with speech predicates excluded. Such complements precede the verb and have accusative objects, but differ from root clauses and fully-finite verbal embeddings in that they have accusative subjects and lack agreement. This is exemplified in (91) below:

(91) Natasha [sen-i   gel-di   ] san-ıyor
Natasha [you.**ACC** come-**PST**] believe-**PROG**
'Natasha believes that you came; Natasha believes of you to have come.'

In English, the ability to license nominative subjects, and hence finiteness, has been traditionally associated with tense. Based on examples as in (91), Turkish is often likened to European Portuguese in that nominative is licensed by agreement (Kornfilt 2007), or agreement and mood (Aygen 2002, 2006). In root clauses and in embedded clauses with nominative subjects, agreement is obligatory.

Embeddings with the accusative subject have a different syntactic status. For instance, they are transparent for binding of anaphors (92b), unlike their counterparts with nominative subjects (92a):

(92) a. Binding into a clause with the nominative subject
*öğrenci-ler*ᵢ [birbir-leri*ᵢ   sınav-ı   geç-ecek-ler] san-ıyor-lar
student-PL   each.other-3PL test-ACC pass-FUT-3PL believe-PROG-3PL
Intended: 'The students*ᵢ believe each other*ᵢ will pass the test.'

(Kornfilt 2007: 311, ex.5)

b. Binding into a clause with the accusative subject
öğrenci-ler*ᵢ birbir-lerin-i*ᵢ   sınav-ı geç-ti   san-ıyor-lar
student-PL   each.other-3PL-ACC test-ACC pass-PST believe-PROG-3PL
'The students believe each other to have passed the test.'

(Kornfilt 2007: 313, ex.11)

There are different views on where the accusative comes from, via raising to the matrix clause (Zidani-Eroğlu 1997) or via Exceptional Case Marking (Kornfilt 1984, 1996). For my purposes, it is not important.

Nominalizations   Turkish makes productive use of nominalized clauses. I only discuss indicative nominalizations formed by DIK and (y)ACAK. These complements differ substantially from root clauses in the following aspects: (a) they are case-marked by the matrix verb, (b) they have genitive-accusative case alignment, and (c) have possessive agreement morphology. These properties are exemplified in (93) below:

(93) Nominalized clause:
Natasha [sen-in   gel-diğ-in-i   ] söyl-üyor
Natasha [you-**GEN** come-**NFUT.NMLZ-2SG-ACC**] say2-**PROG**
'Natasha says that you came.'

Nominalizations are used with a wide range of predicates, and for some, e.g. *bulmak* 'discover', it is the only strategy available. However, many predicates are compatible with both

nominalized and tensed complements. Some of them, e.g. *bilmek*, exhibit the so-called factivity alternation (the term from (Özyildiz 2016)): the truth of the complement is presupposed with nominalizations (94a) but not with tensed clauses (94b):

(94)   *Context: Trump won the elections, but ...*

    a. nominalized complement
        #Tunç [Bernie-nin kazan-dığ-ı-nı   ] bil-iyor
        Tunç [Bernie-GEN win-NFUT.NMLZ-3SG-ACC] know-PROG
        Intended: 'Tunç knows that Bernie won.'

    b. tensed complement
        ✓Tunç [Bernie kazan-dı] bil-iyor
        Tunç   [Bernie win-PST] know-PROG
        'Tunç thinks that Bernie won.'   (Özyildiz 2016: 2, ex.1)

However, there are predicates that do not participate in the alternation, and the speaker may overtly disagree with the complement, as evidenced by the following discourse:

(95)   a. Ayşe   [Mars'ta   su   ol-duğ-un-u   ] söyl-üyor/düşün-üyor
        Ayşe.NOM [Mars.LOC water COP-NFUT.NMLZ-3SG-ACC] say2-PROG/think-PROG
        'Ayşe says/thinks that there is water on Mars.'

    b. Ama Mars'ta   su   yok!
        but Mars.LOC water NEG.COP
        'But there is no water on Mars!'

The examples in (95) show that it is not the nominalizations that bring about factivity, otherwise the follow-up in (95b) would have been infelicitous. For my purposes, it suffices to say that nominalizations are epistemically neutral (the speaker does not have to believe the truth of the complement) and that they may contribute discourse-new information; for a thorough discussion of the pattern and an analysis, see (Özyildiz 2016).

3.3.2   Embedding evidentials

As in many other languages of the Anatolia-Balkans-Caucasus region (e.g. Bulgarian and Georgian), in Turkish evidentiality takes the form of present perfect morphology (Izvorski 1997) and is part of the tense system. I will concentrate on the behavior of *mIş*,[35] which can render hearsay (96a) or inference (96b) regarding events that took place in the past:[36]

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35. Following the standard convention in Turkology, capitalized letters indicate change in quality due to morphophonemic alternations: vowel harmony and consonant devoicing.

36. Note that this is not the case of past tense morphology re-purposed for evidentiality: the past tense is real (unlike "fake" past in e.g. counterfactuals (Iatridou 2000)).

(96) a. *Context 1: The news on TV relating to the Beijing Olympics report Usain Bolt's run.*
Usain Bolt koş-**muş**
Usain Bolt run-MIŞ
'Usain Bolt ran, *I hear*.'

    b. *Context 2: Usain Bolt is giving a TV interview, all sweaty and tired right after he runs the 100 meter race. The speaker infers what the proposition is describing from the observable evidence, which is Usain Bolt looking tired.*
Usain Bolt koş-**muş**
Usain Bolt run-MIŞ
'Usain Bolt ran, *I infer*.'   (Şener 2011: 12, ex.5)

The morpheme *mIş* is in complementary distribution with past tense DI, which is sometimes is described as a direct evidential (Slobin and Akşu 1982; Şener 2011).

As first noted by Schenner (2010b), *mIş* can appear in embedded clauses (contra Johanson 2000; Aikhenvald 2004). Below I show that *mIş* is licensed in tensed complements of all types but is banned from nominalizations.

Tensed complements   *mIş* can appear in tensed clauses that feature both nominative (97a, 97b) and accusative subjects (97c):

(97)   *mIş* in tensed complements

    a.   nominative subject; with *diye*:
Beste [sen   hasta ol-**muş**-un diye   ] düşün-dü
Beste [you.NOM sick   be-**MIŞ**-2SG COMP] think-PST
'Beste thought that you allegedly got sick.'

    b.   nominative subject; no *diye*:
Beste [sen   hasta ol-**muş**-un   ] de-di
Beste [you.NOM sick   be-**MIŞ**-2SG] say1-PST
'Beste said that you allegedly got sick.'

    c.   accusative subject:
Beste sen-i   hasta ol-**muş** bil-di
Beste you-ACC sick   be-**MIŞ** think-PST
'Beste thought that you allegedly got sick; Beste thought you to allegedly get sick.'

Just like in the sentences without *mIş*, clauses with nominative subjects instantiate genuine embedding as evidenced by e.g. the possibility of *de re* construal (98) and of interpreting *wh*-phrases in-situ as matrix questions (99):

(98) *de re* construal with *mIş*:

    a. nominative subject; with *diye*:
        Ben [Ortcutt bir   casus-**muş** diye   ] düşün-üyor
        Ben [Ortcutt INDEF spy-**MIŞ**   COMP] think-PROG
        'Ben thinks that allegedly Ortcutt is a spy.'

    b. nominative subject; no *diye*:
        Ben [Ortcutt bir   casus-muş] di-yor
        Ben [Ortcutt INDEF spy-**MIŞ**   ] say1-PROG
        'Ben says that allegedly Ortcutt is a spy.'

(99) *Wh*-in-situ interpreted as a matrix question with *mIş*:

    a. nominative subject; with *diye*:
        Ben [Beste kim-i   sev-**miş** diye   ] düşün-üyor
        Ben [Beste who-ACC like-**MIŞ** COMP] think-PROG
        'Who$_i$ did Ben think that Beste allegedly likes t_i?'

    b. nominative subject; no *diye*:
        Ben [Beste kim-i   sev-**miş**] di-yor
        Ben [Beste who-ACC like-**MIŞ**] say-PROG
        'Who$_i$ did Ben say that Beste allegedly likes t_i?'

Nominalized clauses   In contrast with tensed clauses, *mIş* is banned from nominalizations:

(100) Nominalized clause:
     *Natasha [dün   kar   yağ-dıg-ın-iı-**mış**   /
     Natasha [yesterday snow precipitate-NFUT.NMLZ-3S.POSS-ACC-**MIŞ** /
     yağ-**mış**-dığ-ın-ı   ] bul-du
     precipitate-**MIŞ**-NFUT.NMLZ-3S.POSS-ACC] discover-PST
     Intended: 'Natasha discovered that allegedly it snowed yesterday.'

    As noted above, morpheme *mIş* is also used as a perfect. If its limited embedding capacities were due just to some morphological quirk, one would expect no embedding differences between the evidential and the aspectual guise of *mIş*. This expectation is not borne out. As (101) below shows, *mIş can* appear inside a nominalization in its aspectual meaning:[37]

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37. Lack of evidential semantics in nominalizations indicates that evidential and aspectual meanings of *mIş* are structurally disjoint, which is along the lines of the lexical ambiguity (aspectual vs. evidential) theory of evidential perfects; see Izvorski (1997) for Bulgarian, Tatevosov (2001) for the Daghestanian languages Archi, Bagvalal and Dargwa, and Korotkova (2012) for Georgian.

(101) Natasha [kar   yağ-**mış**   ol-duğ-un-u   ] söylü-yor
       Natasha [snow   precipitate-**MIŞ** be-NFUT.NMLZ-3SG.POSS-ACC] says-PROG
       'Natasha says that it had snowed.'

In (101), *mIş* is attached to the verb stem and the entire complex is headed by the copula, so the syntax of such examples is different compared to (100) above.

In Turkish, as in many other languages (Klein 1992; Katz 2003; Pancheva and von Stechow 2004), perfect is incompatible with temporal frame adverbials; see Şener (2011) for discussion. The impossibility to add such an adverbial to (101) ensures that it is indeed perfect:

(102) *Natasha   [saat tam   bes-te   kar   yağ-**mış**   ol-duğ-un-u
       Natasha.NOM [hour exactly five-LOC snow precipitate-**MIŞ** be-NFUT.NMLZ-3SG.POSS-ACC
       ] söylü-yor
       ] says-PROG
       'Intended: Natasha says that it had snowed at exactly five o'clock.'

In contrast to that, all aspectual restrictions are lifted when *miş* is in its evidential guise (as discussed by Slobin and Akşu (1982)):[38]

(103) saat tam   bes-te   kar   yağ-**mış**
       hour exactly five-LOC snow precipitate-**MIŞ**
       'Allegedly, it snowed at exactly five o'clock.'

3.3.3 Recap

This section shows that *mIş* can be felicitously embedded in Turkish in tensed complements and is banned from nominalizations. The distribution is summarized in Table 3.3 below:

Table 3.3: *mIş* across complementation strategies

		mIş
Tensed complements	subject$_{NOM}$	✓
	subject$_{ACC}$	✓
Indicative nominalizations		☹

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38. Şener (2011) argues that examples such as (103) are only possible with the hearsay uses of *mIş* and that inferential uses impose aspectual restrictions.

The dichotomy view does not take the shape of the complement into account, and claims that evidentials are either embeddable or non-embeddable. In what follows, I concentrate on the contrast between sentences as in (100) on the one hand and as in (97a-97c), on the other. I propose a morphosyntactic explanation of the pattern and show that it is hard to come up with a consistent story that ignores the morphosyntactic make-up of the complement.

3.4 Proposal

I propose that *mIş* behaves in accordance with its morphosyntactic category: it is incompatible with nominalizations, which lack tense, but can appear in tensed clauses, including the non-finite ones. I start by discussing the syntax of nominalizations in Turkish in the cross-linguistic perspective. I then show that, because some verbs can take complements of different type without an apparent change in meaning, a purely pragmatic story (Schenner 2010b) does not derive the facts.

3.4.1 Nominalizations

Nominalizations across languages are traditionally recognized as mixed categories that have both verbal and nominal properties, e.g. some nominalizations can take adverbial modifiers and some only take adjectival ones. I adopt Borsley and Kornfilt's (2000) view according to which all nominalizations are headed by a nominal projection and the degree of "verbiness" of the resulting formation depends on the place in the structure where the nominal projection is introduced, which is a matter of variation within and across languages (see also Kornfilt and Whitman (2011) for an overview). For a taste of this system, consider some nominalization types schematized below:

Figure 3.1: Different types of nominalization

1. *v*P-nominalizations   2. TP-nominalizations   3. CP-nominalizations
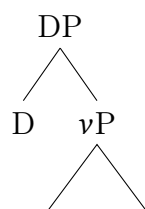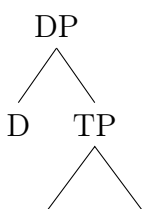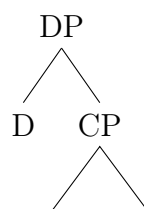
In nominalizations of the first type the verbal spine is truncated relatively low. This type is exemplified by nominal infinitives in Italian: they take the ability to license accusative objects from their verbal core and at the same time pattern like nouns with respect to modifiers (Zucchi 1993). On the other hand, nominalizations of the third type in e.g. Greek and Polish (Roussou 1991) as well as Spanish (Borsley and Kornfilt 2000) arguably differ from regular CPs only in

having an additional, nominal, layer. Whiel the existence of this latter type is debated, it is widely accepted that classic nominalizations are cut off somewhere between VP and TP (see also Alexiadou 2001).

Turkish indicative nominalizations exemplify the second type: TP-nominalizations (Borsley and Kornfilt 2000; Kornfilt and Whitman 2011). Nominalizing morphology occupies the tense slot. There are two markers: DIK for non-past and (y)ACAK for the future. Verbal properties of these nominalizations include: (i) accusative objects, and (ii) the ability to combine with manner adverbials but not with adjectival modifiers.

All morphology linearly to the right of the nominalizer is nominal, and nominal properties of the resulting complex include: (i) genitive subjects, with genitive being the case also assigned by non-deverbal relational nouns;[39] (ii) possessive agreement morphology, a property of DPs; (iii) inability to assign the nominative case, arguably linked to the lack of verbal agreement morphology, and (iv) being case-marked by the verb. Many of these properties manifest themselves throughout the chapter, and are also exemplified in XX below:

(104) a. komş-um   [Beste-**nin**   / *Beste   bir   ağaç
           neighbor.NOM-1SG.POSS [beste-**GEN**   / Beste   INDEF   tree
           dik-tiğ-in-**i**   ] keşfet-ti
           plant-NFUT.NMLZ-3SG.POSS-**ACC**] discover-PST
           'My neighbor discovered that Beste planted a tree.'

       b. komş-**um**   [(ben-in) dikkatlice / *dikkatli bir   ağaç
           neighbor.NOM-**1SG.POSS** [(I-GEN)   carefully   / *careful   INDEF   tree
           dik-tiğ-**im**-i   ] keşfet-ti
           plant-NFUT.NMLZ-**1SG.POSS**-ACC] discover-PST
           'My neighbor discovered that I carefully planted a tree.'

       c. (ben)   dikkatlice / *dikkatli bir   ağaç dik-ti-m
           (I.NOM)   carefully   / *careful   INDEF   tree plant-PST-1SG
           'I carefully planted a tree.'

       d. dikkatli / *dikkatlice insan
           careful   / *carefully   person
           'careful person'

(104a) shows that the subject must be genitive, while nominatives are ruled out, and that the nominalization bears the accusative case. In (104b), the nominalization has the same agreement morphology as the possessed noun, 'my neighbor'. (104b) also shows that nominalizations take verbal (104c) but not nominal (104d) modifiers.

To sum up, nominalized embeddings differ from root clauses and root-clause-like embeddings syntactically in that they have less structure. I propose that it is exactly what bans *mIş* (in its evidential guise) from nominalizations. *mIş* is part of the verbal tense system, and as

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39. The literature offers two ways of deriving genitive subjects in nominalizations of this type: via a D head (Hale 2002; Miyagawa 2011) or via a nominal C immediately above TP (Hiraiwa 2001; Kornfilt 2003).

such is introduced higher than the point at which the verbal spine is truncated to be turned
into a nominalization:

(105) […*mIş* …[$_{NMLZ}$ …]]

Tensed clauses, on the other hand, have tense and therefore license *mIş*. Crucially, the em-
bedding profile of *mIş* is compatible with any analysis of evidentiality, and thus does not resolve
the modal-illocutionary debate. In the syntactic scheme of things, both epistemic modals and
speech-act operators are expected to be high in the structure—higher than the layers present in
nominalizations. Therefore, the very possibility of embedding does not discriminate between
two approaches to evidentiality. For instance, epistemic modals in Turkish are likewise not
licensed in nominalizations, as illustrated by (106b) below:

(106) *-(y)Abil-*

    a. root clause
        Godot gel-**elib**-ir
        Godot come-◊-HAB
        ABILITY/CIRCUMSTANTIAL: ✓'Godot is able to come.'
        EPISTEMIC: ✓'Godot might come.'

    b. nominalization
        Estragon [Godot'nun gel-**ebil**-ečeğ-in-i   ] söyle-di
        Estragon [Godot.GEN come-◊-FUT.NMLZ-3POSS-ACC] say2-PST
        ABILITY/CIRCUMSTANTIAL: ✓'Estragon said that Godot would be able to come.'
        EPISTEMIC: # 'Estragon said that it was possible that Godot would come.'

The possibility modal *-(y)Abil-* can have both an ability and an epistemic interpretation in root
clauses (106a). However, only the former is present in nominalizations (106b). For a more
detailed discussion of epistemics-in-attitudes, see Appendix B.

(106b) is perfectly compatible with Hacquard's 2006; 2010 system wherein epistemics are
structurally higher than other types of modality. However, it does not bear on the question of
mIş being modal because speech-act operators—if represented in the syntax at all (see Potts
(2006) for discussion)—are even higher.

3.4.2 Semantic/pragmatic licensing: Schenner (2010b)

This section discusses Schenner's (2010b) proposal, and similarly-minded approaches, wherein
the licensing of *mIş* is subject to purely semantic/pragmatic constraints on the complements
of certain verbs. Because *mIş* supposedly requires an assertive environment, it is expected
to occur only under verbs that provide it. Schenner's original paper links the distribution
of *mIş* exclusively to the semantics and pragmatics of the verbs and their complements. It
does not discuss the internal structure of different complements. In a Moulton (2009)-style
alternative, the distribution would be more grounded in the syntax-semantics interface: only

some complements have what *mIş* needs. Below I lay out arguments against such view on the distribution of *mIş* in embedded contexts.

3.4.2.1 Outlook

Schenner (2010b) was the first to notice that *mIş* is banned from nominalized complements. He advocates a view according to which the ban results from the semantic/pragmatic clash between the semantics of *mIş* and the meaning of the embedding verb. The main idea is *mIş* requires an assertive environment provided only by some verbs, but not others (cf. a very similar story for Tibetan; Garrett (2001)).

Generally, it is not new to have a semantic explanation for (A) the limited distribution of some elements in embedded contexts, and (B) the availability of different subordination strategies to different verbs.

Semantic classification of attitude predicates   Schenner uses Hooper and Thompson's (1973) classification of *English* attitude predicates into assertive, non-assertive, factive and semi-factive:

Class A: **strongly assertive**: *say, claim, be certain, …*

Class B: **weakly assertive**: *suppose, believe, guess, …*

Class C: **non-assertive**: *be (un)likely, deny, doubt, …*

Class D: **factive**: *resent, regret, be sorry, …*

Class E: **semi-factive**: *realize, learn, find out, …*

Under this view, 'asserted' is an opposite of 'presupposed'. The classification aims at explaining why some English phenomena, e.g. topicalization, that have been argued to be limited to root clauses (Emonds 1976), in fact can appear in *some* embedded environments:

(107)   VP preposing

a.   Wendy **said** she opened the window and **in flew** Peter Pan.

(Hooper and Thompson 1973: 474, ex.45)

b.   *Wendy **was sorry** that she opened the window and **in flew** Peter Pan.

(Hooper and Thompson 1973: 479, ex.104)

(107) illustrates the difference between an assertive predicate *say* that licenses root transformations in its complement (107a) and a factive predicate *be sorry* that does not (107b).

Haegeman (2012) utilizes a similar classification to explain the distribution of root phenomena is syntactic terms. The validity of this classification for English and especially across languages is questionable, as is any other generalization—be it pragmatic as for Hooper and Thompson (1973) or syntactic as for Haegeman (2012)—that applies across the board to the multitude of elements gathered under the root clause phenomena umbrella (Heycock 2006; Aelbrecht, Haegeman, and Nye 2012).

Implicational hierarchy of attitude predicates   Often an implicational hierarchy of attitude predicates (cf. Noonan's (1985) classification) is invoked to explain (A) the limited distribution of some elements in embedded contexts, and/or (B) the availability of different subordination strategies to different verbs.

(108)   Utterance ▷ Propositional attitude (thought) ▷ Knowledge ▷ Perception ▷ Desideratives ▷ Manipulatives ▷ Phasals ▷ Modals

<div align="right">(Cristofaro 2003: 125, ex.5.53)</div>

The main idea is that if a verb of some class takes a particular subordination strategy or licenses an element in its complement, all verbs to the left of it in the hierarchy will share the same property.

One famous confirmation for (108) comes from the distribution of logophoric pronouns, which cannot be used in simple root clauses and typically are used in embedded contexts to refer to the attitude holder. There are languages where logophors only appear under 'say', i.e. leftmost in the hierarchy. However, a reverse situation—which would contradict the hierarchy—is not attested, i.e. it is not possible for a logophor to appear under e.g. 'see' but not 'say' (Culy 1994).

The hierarchy, proposed within a functional-typological approach, maps well onto the Cinque/Rizzi cartographic framework. A number of proposals formalize it in terms of availability of different functional projections across predicates and attribute the limited distribution of multiple phenomena to their dependence on those projections. Specifically, speech predicates have been argued to host some version of speech act layer (Rizzi 1997; Speas and Tenny 2003; Haegeman 2012; Sundaresan 2012; Krifka 2014). In line with Schenner's (2010b) proposal, one could say that Turkish evidentials, too, are hosted by a high projection that is only available to some predicates, hence their limited distribution (Note that in and of itself, it does not show whether they are modal or illocutionary, because epistemic modals are high as well).

Schenner argues that *mIş*-licensing and *mIş*-banning predicates are on two different sides of an independently motivated semantic divide, which is summarized in Table 3.4 below. He does not mention tensed clauses with accusative subjects. The prediction is that they pattern with fully-finite clauses, given that (a) SUBJ$_{ACC}$-clauses are licensed by a subset of verbs that license SUBJ$_{NOM}$-clauses, and (b) in his view, the distribution boils down to the semantics of the predicate.

Table 3.4: Licensing *mIş* (Schenner 2010b)

			mIş
assertive predicates:	Tensed complements	subject$_{NOM}$	✓
		subject$_{ACC}$	✓
other predicates:	Indicative nominalizations		☺

The relevant contrast between the two types of predicates is illustrated with non-evidential sentences in (109). *Demek* 'say' does not presuppose its complement and thus can be used in a scenario where the complement is known to be false (109a). *Bulmak* 'find out', on the other hand, cannot be used in such scenario (109b):

(109)   *Context: It was a gorgeous day yesterday.*

    a.   *demek* 'say'
       ✓Natasha [dün   yağ-dı   ] de-di
       Natasha [yesterday precipitate-PST] say1-PST
       'Natasha said that it rained yesterday.'

    b.   *bulmak* 'find out'
       #Natasha [dün   yağ-dığ-ın-ı   ] bul-du
       Natasha [yesterday precipitate-NFUT.NMLZ-3S.POSS-ACC] find.out-PST
       Intended: 'Natasha found out that it rained yesterday.'

The theory correctly predicts that *mIş* will be licensed under *demek* 'say' (97b,110) but not under *bulmak* 'find out' (111, repeated from 100):

(110)   ✓Natasha [dün   kar   yağ-**mış**   ] di-yor
       Natasha [yesterday snow precipitate-**MIŞ**] say1-PROG
       'Natasha says that allegedly it snowed yesterday.'

(111)   *Natasha [dün   kar   yağ-dığ-ın-ı-**mış**   /
       Natasha [yesterday snow precipitate-NFUT.NMLZ-3S.POSS-ACC-**MIŞ** /
       yağ-**mış**-dığ-ın-ı   ] bul-du
       precipitate-**MIŞ**-NFUT.NMLZ-3S.POSS-ACC] find.out-PST
       Intended: 'Natasha found out that allegedly it snowed yesterday.'

Schenner further argues that this distribution is indicative of the illocutionary, rather than modal, nature of *mIş*. One immediate problem is that there is no comparison with *bona fide*

modals. In Appendix B, I show that these data do not offer an immediate insight into how *mIş* should be treated. Such data nonetheless should be used as a baseline.

3.4.2.2 Empirical problems

Schenner's (2010b) is not the only analytical option to tie the distribution of evidentials to the semantics of attitude predicates and/or their complements. Below I outline problems with various versions of this approach.

Problem 1 To recapitulate, according to Schenner (2010b), *mIş* is only licensed in the complements of assertive predicates and is excluded, on semantic/pragmatic grounds, from the complements of other verbs. The distribution of *mIş* is predicated exclusively on the semantics of embedding verbs. The form of the complement is not taken into account. Instead, the theory seems to implicitly assume a one-to-one mapping between meaning and form: only non-assertive verbs are supposed to take nominalized complements (cf. a remark in (Kornfilt 2007)).

It is true for some verbs that they select for a particular complement: *demek* only takes bare SUBJECT$_{NOM}$-complements, and *bulmak* only takes nominalizations. However, as mentioned in § 3.3.1, many predicates exhibit complementation variability. Schenner's theory predicts that a predicate's ability to license *mIş* is not affected by the form of the complement. The prediction is not borne out. The case in point is *söylemek*, which is a generic speech verb and therefore is expected to license *mIş* across the board. In fact, *mIş* can only appear in tensed clauses (112a), but not in nominalizations (112b):

(112)   *mIş* under *söylemek*

    a.   tensed clause:
        ✓Natasha [dün   kar   yağ-**mış**   ] söylü-yor
        Natasha [yesterday snow precipitate-**MIŞ**] say2-PROG
        'Natasha says that *allegedly* it snowed yesterday.'

    b.   nominalization:
        *Natasha [dün   kar   yağ-dığ-ın-ı-**mış**   /
        Natasha [yesterday snow precipitate-NFUT.NMLZ-3S.POSS-ACC-**MIŞ** /
        yağ-**mış**-dığ-ın-ı   ] söylü-yor
        precipitate-**MIŞ**-NFUT.NMLZ-3S.POSS-ACC] say2-PROG
        Intended: 'Natasha says that *allegedly* it snowed yesterday.'

Schenner's theory does not explain the contrast in (112). To preserve the spirit of his approach, one may attribute the distribution of *mIş* to the semantics of complements rather than verbs. I explore this avenue immediately below.

Problem 2 The data presented above prompt a meaning-in-the-complement analysis along the lines of (Moulton 2009). It would say that (a) some types of complements systematically contribute semantic information that other types do not, and (b) that there is a semantic incompatibility between *mIş* and nominalizations. I start with briefly outlining Moulton's (2009) system. Drawing on the observations made by Özyildiz (2016), I then show that this system does not straightforwardly apply to Turkish, and therefore cannot serve as a basis for explaining away the distribution of *mIş*.

In the Hintikkan framework, attitude predicates are solely responsible for the semantics of an attitude report as a whole. Recent research on the syntax and semantics of complementation argues for a decompositional semantics for attitude predicates (Kratzer 2006, 2013; Moulton 2009; Bogal-Albritten 2016). The idea is that part of the semantic information traditionally placed directly in the verb is instead located in operators in the complement clause.

The empirical motivation comes, in particular, from semantic contrasts systematically observed between different complement types in English. Predicates such as *see* may combine with bare infinitives, to-infinitives (also known as ECM-constructions) and *that*-clauses. With the same verb, the resulting combinations vary across two dimensions: (a) *factivity*, i.e. whether or not they describe facts of the evaluation world; and (b) *epistemic neutrality*, i.e. whether or not they involve belief on part of the attitude holder. These contrasts are illustrated in (113)-(115) below and summarized in Table 3.5:

(113)   **bare infinitives**: factive and epistemically-neutral

Martha saw **Fred driving too fast**.

    a.   # but he actually wasn't.

    b.   ✓but she believed he wasn't.

(114)   **to-infinitives**: non-factive and epistemically non-neutral

Martha saw **Fred to be driving too fast**.

    a.   ✓but he actually wasn't.

    b.   # but she believed he wasn't.

(115)   **that-clauses**: factive and epistemically non-neutral

Martha saw **that Fred was driving too fast**.

    a.   # but he actually wasn't.

    b.   # but she believed he wasn't.

Table 3.5: Contrasts in the *See* paradigm

	factive	epistemically neutral
bare infinitives	✓	✓
to-infinitives	no	no
that-clause	✓	no

Moulton's (2009) proposed solution is to place the quantification over doxastic alternatives in a functional head in *to*-infinitival complements. This correctly predicts that *see* (and other predicates) would behave as an attitude verb only with some complements, which in turn amnesties the speaker from endorsing the truth of the embedded proposition and leads to non-factivity.

To explain this difference and others, Kiparsky and Kiparsky (1971) and much subsequent work proposed that factives are structurally more complex; see Simons et al. (2015) for a pragmatic account.

Coming back to Turkish, one may take the meaning-in-the-complement path. Recall from (109) that the complement of *bulmak* 'find out' is nominalized and presupposed/factive, while the complement of *demek* 'say' is a tensed clause and non-presupposed/non-factive. Under the Moulton-Kratzer world view, factivity would result from an operator hosted by nominalizations, but not by tensed clauses. The next step would be to show that *mIş* is incompatible with factivity, or, following Schenner's initial idea, that *mIş* needs an assertive environment, something that nominalizations cannot provide.

While explaining the clash between evidentiality and factivity would be a challenge of its own, there are more immediate problems. As discussed at length by Özyildiz (2016), factivity of Turkish nominalizations depends on the embedding verb and thus does not support the meaning-in-the-complement view. Nominalizations are used with a wide range of predicates, and for some, e.g. *bulmak* 'discover', it is the only strategy available. However, many predicates are compatible with both nominalized and tensed complements. Some of them, e.g. *bilmek*, exhibit factivity alternation: the truth of the complement is presupposed with nominalizations (116a, repeated from 94a) but not with tensed clauses (116b, repeated from 94b):

(116)   *Context: Trump won the elections, but …*

    a. nominalized complement
        #Tunç [Bernie-nin   kazan-dığ-ı-nı   ] bil-iyor
        Tunç   [Bernie-GEN win-NFUT.NMLZ-3SG-ACC] think/know-PROG
        Intended: 'Tunç knows that Bernie won.'

b. tensed complement
✓Tunç [Bernie kazan-dı] bil-iyor
Tunç [Bernie win-PST] think/know-PROG
"Tunç thinks that Bernie won.'   (Özyildiz 2016: 2, ex.1)

However, there are predicates that do not participate in the alternation, such as *düşünmek* 'think, consider' and *söylemek* 'say'. The speaker may overtly disagree with the complement, as evidenced by the discourse in (117, repeated from 95):

(117) a. Ayşe [Mars'ta   su   ol-duğ-un-u   ] söyl-üyor/düşün-üyor
           Ayşe [Mars.LOC water COP-NFUT.NMLZ-3SG-ACC] say2-PROG/think-PROG
           'Ayşe says/thinks that there is water on Mars.'

       b. Ama Mars'ta   su   yok!
           but Mars.LOC water NEG.COP
           'But there is no water on Mars!'

The examples in (95) show that it is not the nominalizations that bring about factivity, otherwise the follow-up in (95b) would have been infelicitous. For a thorough discussion of the pattern and an analysis, see Özyildiz (2016). For my purposes it suffices to say that nominalizations do not exhibit a consistent semantic property that bans *mIş*. Furthermore, *mIş* is banned even from non-factive nominalizations with verbs that otherwise license it, such as *söylemek* 'say' (see 112 above) and *düşünmek* 'think, consider', exemplified below:

(118) *mIş* under *düşünmek*

       a. Natasha [sen   sınav-ı geç-ti-sin   diye   ] düşün-üyor
           Natasha [you.NOM test-ACC pass-PST-2SG COMP] think-PROG
           'Natasha thinks that you have passed the test.'

       b. Natasha [sen-in   sınav-ı geç-tiğ-in-i   ] düşün-üyor
           Natasha [you-GEN test-ACC pass-NFUT.NMLZ-2SG-ACC] think-PROG
           'Natasha thinks that you have passed the test.'

       c. Natasha [sen   sınav-ı geç-**miş**-sin] düşün-üyor
           Natasha [you.NOM test-ACC pass-**MIŞ**-2SG] think-PROG
           'Natasha thinks that *allegedly* you have passed the test.'

       d. *Natasha   [sen-in   sınav-ı geç-tiğ-in-i-**miş**   /
           Natasha   [you-GEN test-ACC pass-NFUT.NMLZ-2SG-ACC-**MIŞ** /
           geç-**miş**-tiğ-in-i   ] düşün-üyor
           pass-**MIŞ**-NFUT.NMLZ-2SG-ACC] think-PROG
           Intended:'Natasha thinks that *allegedly* you have passed the test.'

Unlike the situation with *bilmek* 'think/know' in (94), there is no apparent semantic difference between tensed (118a) and nominalized (118b) complements of *düşünmek*, therefore a Moulton-style approach does not explain the distribution of *mIş* in embedded contexts.

3.4.3 Recap

Turkish is a language where evidentiality can appear outside of root clauses. The language has several complementation strategies: (i) fully-finite complement clauses, whose internal structure does not differ from the matrix level; (ii) ECM-like constructions with accusative subjects and without agreement; (iii) nominalizations, whose internal structure resembles that of the finite verb all the way up to T but not further. Evidential perfect *mIş* is limited to the first two complement types and is banned from nominalizations.

Evidentiality in Turkish, as well as in many other languages of the region, is part of the tense paradigm. Based on this fact and on the internal syntax of different complements, I propose that *mIş* only appears in environments that license verbal tense. Nominalizations are cut off lower, and therefore cannot host *mIş*. In and of itself, this fact is not instrumental in deciding whether *mIş* is modal or illocutionary. A purely structural view predicts that *mIş* would be banned from nominalizations either way, because both epistemic modals and illocutionary operators are high in the spine.

I further argue against a purely semantic approach to the distribution of *mIş*. According to Schenner (2010b), predicates taking nominalized complements are semantically incompatible with *mIş* because their complements are not asserted, while the illocutionary nature of *mIş* require assertive environments. A similarly-minded analysis would construe the nominalization ban as a semantic clash between factivity and evidentiality.

The major problems with this analysis are empirical but first I want to point out conceptual downsides. The semantic explanation of incompatibility between *mIş* and certain predicates rests on two assumptions. First, Schenner takes for granted Hooper and Thompson's (1973) classification of *English* predicates without showing that Turkish works the same way. Second, it is assumed that evidentials *do* fall into two semantic classes, while there is no independent evidence for *mIş* belonging to either of them. Without additional empirical motivation for a H&T-style classification for Turkish and without additional discussion of the semantics of *mIş*, the argumentation becomes circular.

Furthermore, if only the semantics of embedding verbs is taken into consideration, the contrast in licensing *mIş* between tensed and nominalized complements of the *same* verb is left unexplained. I further show that appealing to the semantics of the complement does not derive the distribution either. The selling point of Moulton's (2009) analysis of English complementation is that there is a consistent semantic contribution of different complement types that manifests itself across different embedding verbs. Not so in Turkish. As explicitly argued by Özyildiz (2016), factivity is a property of embedding verbs and not of nominalizations. This precludes explaining the distribution of *mIş* as a conflict between factivity and evidentiality.

Now, there are several ways to construe the notion of assertiveness with respect to attitudinal complements. Sometimes it is used as a counterpart to presupposition, in the sense that complements of some verbs contribute discourse-new content while complements of some

other verbs are presuppositional (Kiparsky and Kiparsky 1971, see Simons et al. (2015) for a recent discussion). Sometimes it is used in the sense that the complement is the main point of an utterance, rather than the entire sentence (Hooper and Thompson 1973, also Simons 2007). Yet another way to cut the pie is offered by Anand and Hacquard (2009), who argue for a systematic distinction between *doxastic* verbs (*think*) and *proferring* verbs (*say*). Assertiveness is understood as a goal to update the common ground, and it is characterizes proferring verbs but not doxastics. The difference is manifested, in particular, in licensing different interpretations of epistemic modals. However, this distinction does not seem to play a role in licensing *mIş*. Both speech verbs (*demek*, *söylemek*) and belief verbs (*bilmek*, *düşünmek*, *sanmak*) license *mIş* in tensed complements and ban *mIş* in nominalizations.

The bottom line is that in Turkish, like in many other languages (of which English is a good example), the rules that determine which verbs take which types of complements are not semantically transparent. More research is needed to make a meaningful language-specific connection between the semantics of embedding verbs and the syntax and semantics of their complements. This has the potential to shed more light on the distribution of *mIş*. Currently, it is hard to come up with a coherent semantic explanation.

3.5 General discussion

The dichotomy view on evidentiality treats any variation in evidentials as variation in their semantics. One of the overarching goals of this dissertation is to show that there is very little, if any, semantic variation in this domain.

In particular, the literature regards the distinction between evidentials that may appear in attitudinal complements and those that may not as a reflex of the semantic status of respective markers. It is argued that this distinction is evidence of the semantic non-uniformity of this class of expressions. By disentangling the predictions made by modal and illocutionary approaches, I show that the distinction does not resolve the debate. I then turn to the empirical side of things.

After investigating the distribution of Turkish *mIş* in complement clauses, I propose that it is the morphosyntactic status of *mIş* that confines it to particular types of embedding. These data offer a novel outlook at the overall landscape of embeddability of evidentials and allow me to re-frame the embedding puzzle in (morpho)syntactic terms.

3.5.1 Morphosyntactic variation ≠ semantic variation

Across languages, evidentials belong to different morphosyntactic categories. In languages such as Turkish and Georgian, evidentiality is a part of the tense system. In many familiar Germanic languages, evidentiality is expressed via modal verbs: German *sollen* (Ehrich 2001; Faller 2007), Dutch *moeten* (de Haan 2000), English *must* (von Fintel and Gillies 2010; Lassiter 2016). In Quechua, evidentials are focus particles. In Ecuadorian Siona (Western Tucanoan; Bruil 2014), evidentials are a part of the clause typing system. Murray (forth.) describes Cheyenne evidentials as part of the illocutionary mood paradigm, which I take to be an equiv-

alent of saying that they are clause typing markers.

However, there is no evidence for genuinely *semantic* variation. All of the evidentials above are non-challengeable and resist direct denial in dialogues (Chapter 4). If an evidential can appear in attitudes, it would resist third-party assessment (Chapter 7). If an evidential can appear in questions, it would shift (Chapter 8). These properties show that evidentiality is a semantically homogeneous category despite the morphosyntactic variation. I argue that morphosyntactic differences, and consequences thereof, do not preclude a unified semantics. In the next section, I show how this view plays out for embedding and below I provide a parallel from the behavior of modal auxiliaries.

Parameterizing variation does not require postulating different *semantic* categories. One example comes from the scope of modal auxliaries with respect to negation. It is a matter of variation within and across languages (de Haan 1997): some modals obligatorily take wide scope (deontic *must*), some always scope below (*have to*), and some allow both construals (French *devoir*). There are various ways to account for the differences; see (Iatridou and Zeijlstra 2009, 2013) for a polarity-based syntactic story and (Yanovich 2013a: §5, 183-228) for an analysis via semantic conventions.

Another example comes from *modal stacking,* or *double modals*. Perfectly grammatical in Southern United States English (Hasty 2012), configurations such as *might could* and *could might* are marginal in the standard North American English:

(119)   Those ducks **must** not **can** feel cold.   (Hasty 2012)

Possibly the only combination that is used more widely is *would might* (Collins and Singler 2015):

(120)   Rob said there **would might** be some mini series between campaigns right?[40]

In German, on the other hand, modal stacking is a run-of-the-mill occurrence, as evidenced by examples below:

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40. From *Reddit*; http://goo.gl/8tH8R3.

(121) Double modals in German

    a. *sollen* plus *müssen*

       Am   Ende **soll**   kein-er   allein sein **müssen**.

       at.DEF.N.SG.DAT end should.3SG.PRS no-MASC.SG.NOM alone be.INF must.INF

       'No one is supposed to have to be alone at the end.'[41]

    b. *sollen* plus *können*

       Benutzer   **soll**   eigen-es   Passwort   ändern

       user.NOM.SG should.3SG.PRS own-N.SG.ACC password.ACC.SG change.INF

       können

       can.INF

       'The user should be able to change their own password.'[42]

Across languages and varieties, different modals have different embedding properties. Just like in the case with scope above, parameterizing this variation does not require postulating different *semantic* categories. Embedding is a matter of syntax, and modal stacking is usually achieved by splitting levels of syntactic structure where modals can be introduced; see Hasty (2014) on micro-variation in English, Wurmbrand (2003) on capturing the difference between English and German.

3.5.2 New outlook on the cross-linguistic picture

I propose that the ability of evidentials in a given language to occur in attitudinal complements depends on the following two factors: (i) the morphosyntactic category of the marker in question, and (ii) the availability of complementation strategies that can host elements of this type. I discuss the available data below. The cross-linguistic validity of this proposal needs to be evaluated through future fieldwork.

Based in particular on ata from embedding as in (122a, repeated from 76c) and (122b), Faller (2002) argues that Cuzco Quechua evidentials are illocutionary operators.

(122) Cuzco Quechua

    a. *[xuan-**mi** hamu-sqa-n-ta   ] yacha-ni

      [Juan-**DIR** come-NMLZ-3SG-ACC] know-1SG

      Intended: 'I know that *surely* Juan comes'.

                                      (Lefebvre and Muysken 1987: 19, ex.16b)

    b. *Marya ni-wa-rqa-n   [Pilar-**mi** chayamu-sqa-n-ta]

      Marya   say-1SG.O-PST1-3 [Pilar-**DIR** arrive-NMLZ-3-ACC]

      Intended: 'Maria told me that *surely* Pilar arrived'.   (Faller 2002: 222, ex.183a)

It is not in fact necessary to appeal to any particular semantic analysis to account for these data. Quechua languages, a family of 46 languages in the Andean region of South America,

entirely lack finite complementation and extensively use nominalizations (Cole and Hermon 2011). The key feature of Quechua nominalizations is that they do not have the full verbal spine.

Like verbs, Quechua nominalizations take adverbial modifiers and have object agreement (in Quehua varieties where such agreement is present in main clause). Unlike verbs, they use nominal possessive morphology for subject agreement and are obligatorily case-marked. Nominalizers occupy the tense slot. The case of the core arguments differs across varieties of Quechua. In Cuzco and Huanca, there are two options: (i) genitive subject and unmarked direct object, while in main clauses accusative marking is mandatory, and (ii) nominative subject and accusative object, the same as in main clauses. Other varieties have only the latter option.

Cole and Hermon (2011) adapt Borsley and Kornfilt's (2000) view of nominalizations as mixed projections and argue for two types of nominalizations across Quechua. The first type, the genitive-zero case pattern, results from the nominal functional projections being introduced above vP. The second type, the nominative-accusative case pattern, results from having the verbal functional projections below the nominal level.

The overall situation is similar to what I have discussed for Turkish in § 3.4.1. And just like in Turkish, evidentials cannot appear within nominalizations. Note that the morphosyntactic status of evidentials is different in these two languages. In Turkish, evidentiality is part of the tense system, so evidentials should be able to appear where the TP layer is present. In Quechua, evidentials are focus particles, therefore they would require a full CP to embed them.[43] Neither in Turkish nor in Quechua nominalized complements have enough structure to host evidentials. In principle, such situation is not excluded: if Quechua had an analogue of *that*-clauses, the prediction is that evidentials would be able to appear there.

The difference between (Cuzco) Quechua and Turkish is that Turkish does have bona fide finite, non-nominalized, complements and Quechua does not. The next best thing, attested only in some varieties such as Cuzco and Imbabura, is a construction featuring two juxtaposed clauses and limited mostly to 'think' and 'know'. In Imbabura, they don't have a complementizer and in Cuzo, such clauses are introduced by *chay* 'that'.

(123)   Imbabura Quichua
        [pamila-ka   shuj libru-ta-**mi**   kilka-rka] ñuka yacha-ni-mi
        [Pamela-TOP one book-ACC-**DIR** write-PST] I   know-1SG-DIR
        'I know that Pamela wrote a book.'

As evidenced by (123) above, evidentials can appear in these constructions. But their syntactic status is not clear. In Imbabura, binding by a quantifier is not licensed across the clause boundary:

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43. Lefebvre and Muysken's (1987) generalization is that Cuzco Quechua evidentials (validators in their terminology) can only appear in tensed clauses. However, only root clauses are tensed in the language, so it may be another way of saying the same thing.

(124) Imbabura Quichua
       kada runa-mi   ni-n   pay-ka   bañu-nga-mi
       every person-DIR say-PRES s/he-TOP die-IRR-DIR
       '[Everyone]$_i$ says that they$_{j/*i}$ will die.'

In Cuzco, *chay*-clauses are islands for extraction (125a), while nominalized clauses are not (125b):

(125) Cuzco Quechua

       a. *wh*-extraction out of the *chay*-clause
           *pi-n/pi-ta-n   muna-nki platanu ranti-nqa   chay-ta?
           who-DIR/who-ACC-DIR want-2   banana buy-FUT.3 that-ACC
           'Who do you want that shall buy bananas?'
                                                     ([Cole and Hermon 2011](): 1236, ex.63a)

       b. *wh*-extraction out of the nominalized clause
           pi-qpa-ta-n   muna-nki platanu ranti-na-n-ta?
           who-GEN-ACC-DIR want-2   banana buy-NMLZ-3-ACC
           'Who do you want to buy bananas?'   ([Cole and Hermon 2011](): 1236, ex.60)

Based on the data as in (125), it is sometimes argued that *chay*-clauses are quoted. In principle, quotational status is not the only explanation for the ungrammaticality of (124) and (125a). *Pay* may be an anti-logophoric pronoun, and *wh*-extraction is subject to notoriously complicated constraints across languages.

But even if the examples above turn out to instantiate clausal complementation, this is not an argument against my proposal. The crucial idea is that embedding, or the lack thereof, is not directly connected to the semantic status of respective markers. The Cuzco Quechua case above does not require an exclusively modal or an exclusively speech-act analysis, contra the assumption in the literature. I propose that one of the factors at play are syntactic restrictions on the distribution of evidentials, which result from the interplay of the morphosyntactic category of the embeddee and of the syntactic structure of the embedder.

This discussion provides a new perspective on other languages with non-embeddable evidentials. Preliminary investigation reveals that in some of those languages, attitudinal complements feature verb forms with dependent mood marking or otherwise reduced categorial distinctions, as it is the case in Abkhaz ([Chirikba 2003]()); Cheyenne ([Murray 2010](), [Murray]() forth.); Maricopa ([Cristofaro 2013](), based on [Gordon 1986]()); West Greenlandic ([Fortescue 2003]()). In other languages, attitudinal complements are all nominalizations, as in e.g. Tukano ([Aikhenvald 2004]()) and Tariana ([Aikhenvald 2006]()). While I am not in a position now to pinpoint the exact reasons of non-embeddability in those languages, the procedure of finding such reasons should now be clearer.

3.5.3 Embedding as a window on semantics?

Previous approaches treat the (non-)embeddability as a corollary of some special semantic status of such evidentials. I have shown that that view is not empirically adequate and argue that the apparent semantic variation in evidentiality can be reduced to the variation in the syntactic categories of evidentials and the variation in the sentential complementation. This proposal is compatible with evidentials construed as either illocutionary modifiers or epistemic modals. To sum up, the non-embeddability alone is not a valid diagnostic of the kind of meaning the evidential marker contributes.

This brings upfront the need for better empirical diagnostics of modal-hood and of speech-act-hood. Below I outline what kind of data on embedding will contribute to a better understanding of the semantics of embedded evidentials.

Across languages, attitude predicates differ in what semantic and syntactic phenomena can appear in their complements. One good example comes from the distribution of subjunctive mood in Romance, which depends on the interaction of the semantics of the subjunctive with the semantics of a given predicate (Quer 1998).

It has been argued that evidentials may be illocutionary or may be modal. This hypothesis can be tested by looking at the distribution of evidentials across complements of different predicates in comparison to other illocutionary and modal elements.

Diagnosing speech-act-hood   As discussed in § 2.5, there is no clear-cut empirical procedure for identifying speech-acty phenomena. The next best thing may be to look at *Root Clause Phenomena* (RCP), which are often argued to be connected to illocutionary force. Given the semantic and syntactic heterogeneity of the RCP class, it is not helpful to just transplant a classification based on one language into another. Moreover, there can be subtle variation even in licensing what looks like one category within the class of RCP, as Wiklund, Bentzen, Hrafnbjargarson, and Hróarsdóttir (2009) show for the embedded *Verb Second* (V2) across Scandinavian. The crucial step is to first identify RCP in a given language, and then use their distribution as a baseline in comparison with the distribution of evidentials. Schenner (2009) is an example of such a study. Based on the corpus data, he shows that the distribution of German *sollen* is not identical to the distribution of V2. Both *sollen* and V2 could be considered speech-acty, but their distribution is different. However, *sollen* allows for several interpretations when embedded and this was not controlled for.

Recall the implicational hierarchy from (108). Based on that hierarchy, the general expectation is that speech verbs will be more permissive and more likely to license various elements with limited distribution. Perception verbs, on the other hand, are less likely to license such elements. In between, there is a grey area comprised of various attitude predicates such as 'think' and 'know'. If evidentials deal with speech acts and speech acts are located high in the structure, the expectation is for evidentials to appear only under verbs that are left in the hierarchy.

Diagnosing modal-hood   Anand and Hacquard (2013) show that attitude predicates in French, Italian and Spanish fall into three classeswith respect to their ability to license epis-

temics (Koulidobrova and Davidson (2015) argue that the same distinctions are at play in licensing Role Shift in American Sign Language):

(126) A. REPRESENTATIONAL ATTITUDES license epistemic modals in their complements:
        doxastics, e.g. 'think'; speech predicates, e.g. 'say'; semi-factives, e.g. 'realize'

    B. NON-REPRESENTATIONAL ATTITUDES do not license epistemic modals in their complements:
        desideratives, e.g. 'want', 'wish'; directives, e.g. 'demand'

    C. HYBRID ATTITUDES license possibility but not necessity epistemic modals:
        emotive doxatics, e.g. 'fear', 'hope'; dubitatives, e.g. 'doubt'

This classification above may help determine whether an evidential in a given language resembles epistemics—with the caveat that epistemics from that language should be used as a baseline, as the typological status of Anand and Hacquard's conclusions is not known. The first step would be to determine the distribution of epistemic modals in embedded contexts. The second step would be to look at the behavior of evidentials and compare it to that of epistemics.

It is instrumental to look at the properties of the embedder to explain the distribution of embedded elements and to better understand their semantics. Therefore, investigating embedded evidentials along the lines sketched above would be a good starting point: it is important to look at different classes of attitude verbs with an eye on the differentiated distribution of other phenomena. Further research will show whether embedded evidentials pattern with epistemics or with illocutionary operators.

Appendix A: Embedded tense in Turkish

I am not aware of any research on the sequence-of-tense phenomena in Turkish and on the semantics of nominalized tense. This Appendix provides some preliminary data, but clearly more research is needed. Examples below are on the interpretation of the verbal tense:

(127) Past-under-past, finite clause
Beste   [sen   hastay-di-n] de-di.
Beste.NOM [I.NOM sick-PST-1SG] say1-PST

   (i)   #SIMULTANEOUS READING Beste said: you are sick.

   (ii)   ✓BACK-SHIFTED READING Beste said: you were sick.

(128) Present-under-past, finite clause
Beste   [sen   hasta-sin] de-di.
Beste.NOM [I.NOM sick-1SG] say1-PST

   (i)   ✓SIMULTANEOUS READING Beste said: you are sick.

   (ii)   ✓DOUBLE-ACCESS READING Beste said: you are sick; and you are still sick at the utterance time.

Examples (127) and (128) show that embedded past and present in Turkish are interpreted at their face value and that Turkish is not an SOT language in the sense of (Ogihara and Sharvit 2012).

With respect to the tense in nominalizations, some researches argue that it is defective in terms of features (Aygen 2002) and that it can only be interpreted with respect to the tense of the matrix verb (Kornfilt 2007). For instance, it is argued that DIK is a non-future tense that can only denote precedence or simultaneity with respect to the matrix tense. If that were the case, the double-access reading (Abusch 1997) would have been banned. As evidenced by (129) below, the reading in question is attested:

(129) DIK-under-past, nominalization
Beste   [sen-in   hasta ol-duğ-un-u   ] de-di.
Beste.NOM [you.ACC sick be-NFUT.NMLZ-2SG.POSS-ACC] SAY1-PST

   (i)   ✓SIMULTANEOUS READING Beste said: you are sick.

   (ii)   #BACK-SHIFTED READING Beste said: you were sick.

   (iii) ✓DOUBLE-ACCESS READING Beste said: you are sick; and you are still sick at the utterance time.

The interpretations in (129) show that semantically DIK behaves just like the regular, independent, tense.[44]

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44. I hypothesize that the back-shifted reading is absent due to aspectual properties of the copula.

Appendix B: Embedded modals in Turkish

In view of modal theories of evidentiality it is always worth using *bona fide* epistemic modals in a given language as a baseline. Below I describe the embedding behavior of two modals, a possibility modal *-(y)Abil-*[45] and a necessity modal *-mAlI*.[46] Each of them has epistemic and non-epistemic uses, e.g. deontic and circumstantial.

(130) Root clauses

    a. *-mAlI*
       Godot   gel-**meli**
       Godot.NOM come-□
       DEONTIC: ✓'Godot has to / is supposed to come'
       EPISTEMIC: ✓'Godot must come'

    b. *-(y)Abil-*
       Godot   gel-**elib**-ir
       Godot.NOM come-◇-HAB
       ABILITY/CIRCUMSTANTIAL: ✓'Godot is able to come.'
       EPISTEMIC: ✓'Godot might come.'

(131) Tensed clauses with a nominative subject

    a. *-mAlI*
       Estragon   [Godot   gel-**meli** diye   ] duy-du
       Estragon.NOM [Godot.NOM come-□ COMP] hear-PST
       DEONTIC: ✓'Estragon heard that Godot had to come.'
       EPISTEMIC: ✓'Estragon heard that Godot must come.'

    b. *-(y)Abil-*
       Estragon   [Godot   gel-**ebil**-ir] san-ıyor-du
       Estragon.NOM [Godot.NOM come-◇-HAB] believe-PROG-PST
       ABILITY/CIRCUMSTANTIAL: ✓'Estragon thought that Godot was able to come.'
       EPISTEMIC: ✓'Estragon thought that it was possible that Godot would come.'

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45. *-(y)Abil-* is an auxiliary verb that can be inflected and that is a part of the verbal complex, as evidenced by its participation in the vowel harmony. Etymologically, it is goes back to a converbial construction with *bil-* 'know / think' (Rentzsch 2015: §2.2.1: 38-42; §3.1: 88-116), a typologically common source for ability and possibility modals (van der Auwera and Plungian 1998), cf. English *can* > **cunnan* 'to know'.

46. *-mAlI* is a suffix derived from the combination of a deverbal noun and a possession marker (Rentzsch 2015: §5: 223-225; §7: 280), a typologically common source for necessity modals (Bybee, Perkins, and Pagliuca 1994), cf. English *have to*.

(132)   Tensed clauses with an accusative subject

    a. *-mAlI*

       Estragon   [Godot'yu   gel-**meli** diye   ] duy-du

       Estragon.NOM [Godot.ACC come-□ COMP] hear-PST

       DEONTIC: ✓'Estragon heard that Godot had to come; Estragon heard of Godot that he had an obligation to come'

       EPISTEMIC: # 'Estragon heard that Godot must come'

    b. *-(y)Abil-*

       Estragon   [Godot'yu   gel-**ebil**-ir] san-ıyor-du

       Estragon.NOM [Godot.NOM come-◇-HAB] believe-PROG-PST

       ABILITY/CIRCUMSTANTIAL: ✓'Estragon thought that Godot was able to come; Estragon thought of Godot that he was able to come.'

       EPISTEMIC: ✓'Estragon thought that it was possible that Godot would come; Estragon thought of Godot that it was possible that he would come.'

Recall from § 3.4.1 that tensed clauses with accusative subjects in Turkish differ from fully-finite embeddings: unlike with nominatives, agreement is not obligatory and the overall syntax is different, e.g. they are not opaque for binding of reflexives. Based on this, it is often argued that finiteness and the nominative case are licensed in Turkish by agreement, as in e.g. European Portuguese.

Aygen (2002, 2006) argues that *-(y)Abil-* cannot have an epistemic interpretation with accusatives, unlike with nominatives, and based on that proposes that the licensor of finiteness is mood. My consultants, as evidenced by (132b), judge epistemic *-(y)Abil-* with accusative subjects as acceptable but do not like epistemic *-mAlI* in these configurations.

One potential complication is that not all attitude predicates license accusative subjects in their complements, in particular, semantically neutral *de-* 'say' and *düşün-* 'think' do not. And of those predicates that license, some have complex semantics, e.g. *san-* and *bil-* often render false belief rather than just belief. Then, some configurations may be infelicitous due to a semantic clash between the predicate and the embedded modal, rather than a syntactic incompatibility between mood and accusative subjects. For instance, *-mAlI* is judged as questionable under *san-* in both interpretations:

(133)   *-mAlI* under *san-*

     ??Estragon   [Godot   gel-**meli**] san-ıyor

     Estragon.NOM [Godot.NOM come-□] believe-PROG

     DEONTIC: # 'Estragon (falsely) believed that Godot had to come.'

     EPISTEMIC: # 'Estragon (falsely) believed that Godot must come.'

Possibility and necessity modals have a different embedding profile not only in Turkish. In English and across Romance (Anand and Hacquard 2013), possibility but not necessity modals are licensed in the complements of emotive doxastics such as 'hope' and dubitatives such as 'doubt', which is illustrated by the following examples:

(134) a. *might* under *doubt*
       ✓Meaghan doubts that it **might** be raining.

       b. *must* under *doubt*
       # Meaghan doubts that it **must** be raining.

Anand and Hacquard attribute the contrast in (134) to the mixed nature of embedders such as *doubt*. First, such predicates are analyzed as quantifiers over information states, a necessary condition for licensing epistemics, as is the case with 'think'. Second, they also have a preference component, a sufficient condition to ban necessity modals, as is the case with 'want'.

Coming back to Turkish, I hypothesize that *san-* may be have a dubitative component (cf. Kierstead (2013) who describes Tagalog *akala* as involving a doubter), which in turn has the potential to explain why it does not license *-mAlI*. I leave testing this hypothesis for future research.

(135) Nominalizations

       a. *-mAlI*
       Estragon   [Godoťnun dün   gel-**meli** ol-duğ-un-u   ]
       Estragon.NOM [Godot.GEN yesterday come-□   be-NFUT.NMLZ-3POSS-ACC]
       söyle-di
       say2-PST
       DEONTIC: ✓'Estragon said that Godot had to come yesterday.'
       EPISTEMIC: # 'Estragon said that Godot must have come yesterday.'

       b. *-(y)Abil-*
       Estragon   [Godoťnun gel-**ebil**-eçeğ-in-i   ] söyle-di
       Estragon.NOM [Godot.GEN come-◊-FUT.NMLZ-3POSS-ACC] say2-PST
       ABILITY/CIRCUMSTANTIAL: ✓'Estragon said that Godot would be able to come.'
       EPISTEMIC: # 'Estragon said that it was possible that Godot would come.'

The two modals differ with respect to temporal orientation, and the examples in (135) form a near-minimal pair modulo tense: non-future in (135a), future in (135b). These examples show that epistemic interpretations are not licensed in nominalizations. As another illustration, consider the modalized proposition 'There is water on Mars'. It does not easily allow non-epistemic interpretations. Turning it into a nominalized complement renders infelicity as in (136):

(136) Nominalizations: *-(y)Abil-*
       #Estragon   [Mars'ta   su   ol-**abil**-eçeğ-in-i   ] söyle-di
       Estragon.NOM [Mars.LOC water be-◊-FUT.NMLZ-3POSS-ACC] say2-PST
       Intended: 'Estragon said that there would likely be water on Mars.'

Below is a summary of the data discussed:

Table 3.6: Embedded modals in Turkish

	□ -mAlI		◊ -(y)Abil-	
	epistemic	non-epistemic	epistemic	non-epistemic
tensed SUBJ$_{NOM}$	✓	✓	✓	✓
tensed SUBJ$_{ACC}$	☹	✓	✓	✓
NMLZ	☹	✓	☹	✓

A call for subjectivity

CHAPTER 4

Non-challengeability in dialogues

Abstract: Across languages, grammatical evidentials exhibit the property of non-challenge-ability: they resist direct denial in dialogues. The literature attributes this property to the alleged not-at-issue status of the information contributed by evidentials. In this chapter, I argue against this view and show that with respect to disagreement, evidentials pattern with subjective expressions such as first-person belief reports and statements about pain. Like other subjective expressions and unlike e.g. appositives, evidentials ban *all* kinds of disagreement about content and not just explicit denial. This novel observation has no account in the literature. It falls out naturally once a theory of evidentiality treats evidentials on a par with other subjective expressions. It is thus unnecessary to appeal to a special discourse status of evidentials to explain their behavior in conversations.

4.1 Introduction

A hallmark of grammatical evidentials is their *non-challengeability*:[47] a direct denial can only target the scope proposition, but not the *Evidential Requirement* (ER) ((Izvorski 1997) and later work).[48] This property is illustrated with a Cuzco Quechua dialogue:[49]

(137)   Cuzco Quechua

    A. Ines-qa   qaynunchay   ñaña-n-ta=**n**   watuku-rqa-n
        Inés-TOP   yesterday   sister-3-ACC=**DIR**   visit-PST-3
        'Inés visited her sister yesterday, *I saw*'.

    B. Mana=n   chiqaq-chu.
        not=DIR   true-NEG
        'That's not true.'

(i)   = ¬ [Inés visited her sister] **p**
(ii)   ≠ ¬ [You saw that Inés visited her sister] **ER**

(based on Faller 2002: 156, ex. 116-117b)

B's reaction to A's statement in (137) can only indicate disagreement with the scope proposition. For instance, it can be followed up with 'Inés only visited her mother' (Faller 2002: 158, ex.119). However, (137) cannot be understood as a disagreement with the ER, and the follow-up 'You didn't see it' results in infelicity (Faller 2002: 158, ex.118). The same holds for other Cuzco Quechua evidentials. To sum up, it is impossible to challenge the statement that Origo acquired the scope proposition in a way lexically specified by the evidential.

The pattern illustrated in (137) is observed in many other geographically unrelated languages, e.g. in Bulgarian (South Slavic; Izvorski 1997), Cheyenne (Algonquian; Murray 2014), Georgian (South Caucasian; Korotkova 2012), German (Germanic; Faller 2007) and St'át'imcets (Salish; Matthewson et al. 2007). Based on the data from available studies of evidentiality within formal semantics, the non-challengeability of the ER is a *universal* property of grammatical evidentials. It does not depend on the morphosyntactic category of evidentials in a given language (unlike e.g. syntactic embeddability; Chapter 3) or on the type of information source (e.g. hearsay evidentials are non-challengeable just as direct evidentials are).

The central puzzle addressed in this chapter is as follows: what bans disagreement with the ER?

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47. This property is also referred to as *assent/dissent* (Papafragou 2000, 2006).

48. Premises for making a conclusion may be challenged, e.g. faulty logic or an untrustworthy source (Faller 2007).

49. In (137), =*n* is a morphophonemic variant of =*mi*.

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The near-consensus in the literature (a.o. Izvorski 1997; Matthewson et al. 2007; Murray 2014) is that statements with evidentials make two contributions. The scope proposition constitutes the main point of an utterance and thus enjoys the *At-Issue* (AI) status. The ER, one the other hand, is analyzed as a kind of peripheral, *Not-At-Issue* (NAI), information (in the sense of Tonhauser et al. 2013). Relying on the view on discourse wherein conversational disagreement is derived solely from the AI vs. NAI divide (e.g. Potts 2005, Roberts 1998/2012), the non-challengeability of the ER is explained via its discourse status: by definition, NAI cannot be targeted by direct responses.

I argue that the view above is not justified empirically. The argument proceeds in two steps.

First, I show that non-challengeability does not carve out just NAI (pace Simons et al. 2010). It is also an inherent trait of a host of expressions that I will call *subjective*, such as first-person belief reports or statements about pain. The source of non-challengeability is different in each case. For NAI, non-challengeability results from the special discourse status of the information conveyed by a given construction. For subjective expressions, it is the privileged status of the experiencer that makes disagreement unacceptable. Such expressions describe experiences to which individuals have exclusive access (e.g. mental states) and which others have no grounds to contest. This non-linguistic fact has linguistic consequences: denial is an infelicitous reaction to statements with subjective expressions. Summing up, non-challengeable content comes in at least two varieties: (i) NAI content and (ii) *Subjective Content* (SC). This means that direct denials alone are not indicative of the NAI nature of the ER, contrary to the accepted wisdom.

Second, I show that NAI on the one hand, and SC on the other, part company when examined against a variety of disagreement strategies. While there are ways to disagree with presuppositions or appositives (typical representatives of the NAI class), subjective expressions resist *all* kinds of disagreement about content. Based on novel data from Bulgarian and Turkish, I argue that evidentials exhibit the same kind of strong non-challengeability as subjective expressions do. I further demonstrate that the only kind of disagreement allowed for evidentials and e.g. first-person belief reports is what I refer to as "performance disagreement" (the term from (Anand 2009), who discusses similar facts about taste ascriptions): a situation when the speaker is considered incompetent (e.g. drunk) or insincere (e.g. lying) by their addressee. The overall pattern of disagreement with evidentials is not easily amenable to an NAI analysis. Such an analysis incorrectly predicts that disagreement with evidentials should be possible modulo the constraints on propositional anaphora. I thus conclude that the data from various kinds of denials (A) do not support the NAI view of evidentiality and (B) call for a new, subjective, approach.

The chapter is structured as follows. § 4.2 and § 4.3 present two analytical options that explain non-challengeability away, the NAI status and subjectivity, and explore their applications to evidentiality. § 4.4 demonstrates that non-challengeable expressions do not form a uniform class with respect to various kinds of disagreement and that evidentials do not pattern with NAI. § 4.5 is on performance disagreement. § 4.6 concludes.

4.2 Route 1 to direct denial: NAI content

This section discusses the first route to banning direct denials: via NAI status. This route reflects the now-standard view that disagreement is reducible to the AI vs. NAI distinction, and it is widely taken in the literature on evidentiality.

4.2.1 Issues in discourse

Larger issues structure the discourse. Successful interactions bear on those issues and ultimately resolve them. Interactions are infelicitous if they fail to do so. Recent research on conversational dynamics identifies different types of content (Gutzmann 2015; Potts 2005; Simons et al. 2010; Tonhauser 2012; Tonhauser et al. 2013):[50]

> — AT-ISSUE (AI): information central to the issues discussed
> — NOT-AT-ISSUE (NAI): peripheral information

NAI does include presuppositions (what is taken for granted), but also new information that constitutes a comment rather the main point of an utterance, e.g. conventional implicatures (Potts 2005) (though see (Schlenker 2013) for a presuppositional analysis of Potts' cases).

In frameworks based on the notion of *Question-Under-Discussion* (QUD) (Roberts 1998/2012), the difference between two types of content is formalized based on the relevance to the *Current Question* (CQ) being discussed (Simons et al. 2010; Tonhauser et al. 2013). A proposition is relevant if it contextually entails a partial or complete answer to the current question. A question is relevant if one of its answers contextually entails a partial or complete answer to the current question.

Is there a relation between the structure of discourse and grammar? Natural language is sensitive to the AI vs. NAI divide and has designated means to mark it, e.g. focus:

(138) Where did Kit spend his vacation?

    a. ✓Kit flew to [**CALIFORNIA**]$_F$.

    b. #[**KIT**]$_F$ flew to California.

As examples like (138) show, English prosodic focus highlights what the issue under discussion is. Only (138a) is a felicitous reply while (138b) is out, as it suggests that the question asked is about people who flew to California.

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50. The view represented above treats the divide between AI and NAI content as binary. Emerging research suggests that the distinction is gradient, which would be natural if it were rooted in salience (as per Jasinskaja 2016).

4.2.2 Non-challengeability of NAI

The divide is obviously important in determining the range of replies to questions and reactions to assertions. Often it is argued that the divide is *solely* responsible for patterns of conversational disagreement (cf. (Amaral et al. 2007; Anderbois et al. 2015) and diagnostics 1a,b,c in (Tonhauser 2012)):

— A direct response has to target AI.
— NAI cannot be targeted by a direct response.

These patterns are familiar from presuppositions, which one cannot explicitly deny (139ii):

(139)   PRESUPPOSITIONS
      A. **The** queen of the US visited Jupiter.
      B. That's not true.

    (i) $= \neg$ [The queen of the US visited Jupiter] **assertion**

    (ii) $\neq \neg$ [The US has a queen] **presupposition**

The only way to 'pick on' the existence presupposition introduced by *the* is via something like 'Hey, wait a minute' (von Fintel 2004).

    Focally backgrounded content behaves likewise:

(140)   FOCUS
      A. $[\text{KIT}]_F$ flew to California.
      B. That's not true.

    (i) $= \neg$ [Kit flew to California] **focally foregrounded**

    (ii) $\neq \neg$ [There is someone who flew to California] **focally backgrounded**

Focus in (140) indicates that the conversation is about who flew to California, and the at-issue contribution of A's statement is that Kit is one of such people. Consequently, a response can only target this contribution, as in (140i), but not the claim that someone flew to California at all, as in (140ii).

    More recently, a number of constructions have been analyzed as a vehicle for the not-at-issue content based in particular on their non-challengeability: appositives and non-restrictive relative clauses (Potts 2005, 2007a), expressives such as *darn* (McCready 2008, 2010), honorifics (Potts 2005), and various parentheticals (Potts 2002; Simons 2007):

(141)   EXPRESSIVES
      A. That **damn** Ortcutt lost his passport.
      B. That's not true.

(i) $= \neg$ [Ortcutt lost his passport] **main sentence**

(ii) $\neq \neg$ [There is something wrong with Ortcutt] **damn**

(142) APPOSITIVES

    A. Ortcutt, **a spy**, lost his passport.
    B. That's not true.

(i) $= \neg$ [Ortcutt lost his passport] **main sentence**

(ii) $\neq \neg$ [Ortcutt is a spy] **appositive**

Direct responses such as *That's not true* cannot target the semantic contribution of *damn* (141ii), or the content of an appositive (142ii). Similar results hold for other types of response, such as *That's right*: one can only agree with what is at-issue.

4.2.3 ER as NAI

Recall from (137) that a direct denial can only target the scope proposition and never the ER. This property is illustrated again in (143) below:

(143) Georgian

    A. *Context (inference from results): I come home and see a dirty baking sheet.*
    deda-s   ghvezel-i **dauc'xvia**
    mother-DAT pie-NOM bake.3SG:S.3SG:O.**EV:PST**
    'Mom mad pies, *I infer*'.

    B. es   ar aris   martali
    it.NOM NEG be.3SG.PRES true
    'That's not true.'

(i) $= \neg$ [Mom did not make pies] **p**
(ii) $\neq \neg$ [You infer that Mom made pies] **ER**

    The ER exhibits the same pattern as expressions under the NAI umbrella. Not surprisingly, formally different approaches to evidentiality, coming both from the modal and from the illocutionary camp, meet at one point: the ER is almost always treated as a kind of NAI content (first proposed by Izvorski (1997)).

    The ER-as-NAI view is widely accepted. The approaches range from (A) **presuppositional** (Izvorski 1997; Lee 2013; Lim 2010; Matthewson et al. 2007; McCready and Asher 2006; Peterson 2010a; Sauerland and Schenner 2007; Schwager 2010; Şener 2011) to (B) ones where the ER is a **part of sincerity conditions** associated with a speech act (Faller 2002) to (C) ones where the ER is **paralleled to Pottsian supplements** (Murray 2010, 2014; Koev 2016). Modulo the technical and conceptual differences, the key intuition of these theories is that the ER is

an *automatic* restriction on the common ground and as such is never up for negotiation by the interlocutors. The ban on explicit denial is thus correctly predicted. This view is schematized in Figure 4.1 below:

Figure 4.1: Restricting the common ground to the ER-worlds
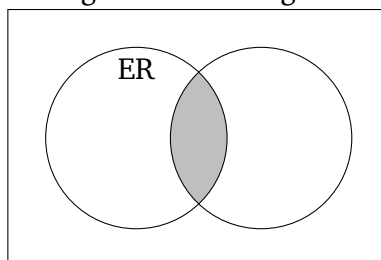
The difference between the camps above is in the point in communication where the ER-restriction is imposed. In presuppositional approaches, including the modal ones, the ER is a restriction on the input common ground, or is a result of pressupposition accomodation. In illocutionary approaches (first articulated in this specific way by Murray 2010, 2014), shrinking the common ground to the ER-worlds takes place at a later point, as part of a series of updates that speech acts with evidentials bring about. Faller (2002) does not explicitly discuss how sincerity conditions are recorded, but I do not see any problem with treating them along the lines of (Murray 2010, 2014).

A common trait of the above proposals is that, out of several empirical means to diagnose discourse status (see e.g. Tonhauser 2012), the only one used is the non-challengeability test. As I will argue throughout the chapter, the denial pattern lends itself to an alternative explanation and thus is not indicative of the NAI status of the ER.

Additional arguments for the ER-as-NAI view come from projection (=escaping the scope of entailment-cancelling operators) (Faller 2002; Izvorski 1997; Matthewson et al. 2007; Waldie et al. 2009; Murray 2010). However, recent research challenges Simons et al.'s (2010) idea that discourse status and projection go hand in hand (see (Jasinskaja 2016) for discussion). For instance, it is possible to project and exhibit properties of AI (sentence-final appositives, see section §4.4). Furthermore, the overall cross-linguistic profile of evidentials with respect to projection is largely understudied and non-challengeability does not correlate with projection: while all evidentials are non-challengeable, some of them may have narrow scope in conditionals, e.g. Tagalog (Kierstead 2015), or in attitudes, e.g. Turkish and Korean (Korotkova 2015). In light of this, the data on disagreement are essential for modeling evidentiality. The data from projection are discussed in greater detail in Appendix D.

4.2.4 Recap

Across languages, the ER is non-challengeable. The inability to be directly disagreed with—without special tricks such as 'Hey, wait a minute'—has been long identified as a hallmark of presuppositions. More recently, this property has been also associated with a host of expres-

sions gathered under the NAI label, such as appositives, parantheticals, and expressives. The underlying reason for the non-challengeability of the NAI content, including presuppositions, is its peripheral discourse status: only the AI content, the one that is upfront, is up for discussion. Everything else is regarded as a mere comment.

The mapping between the non-challengeable expressions on the one hand, and the NAI content on the other, is viewed in the literature as straightforward—in fact, the impossibility of explicit denial is used as one of the prime diagnostics for the NAI content (Tonhauser 2012). Conversely, its availability is linked to the AI status.

Following this trend, the literature on evidentiality almost always treats the ER as some kind of NAI, the main debate centering around whether the ER is a presupposition or something else. An argument in favor of 'something else' approaches (Faller 2002; Murray 2010, 2014; Koev 2016) is that the ER is discourse-new, which in presuppositional approaches has to be analyzed as an obligatory presupposition accommodation, a move typically used as a last resort (Beaver 2001: §5; von Fintel 2008). Without taking sides in the debate, in the next section I challenge the very premise of these approaches—the idea that non-challengeability uniquely identifies NAI content.

4.3   Route 2 to direct denial: Subjectivity

This section discusses another route to banning direct denials: via subjectivity. This route is practically never addressed head-on with respect to evidentials. I will show that, despite being neglected, it is a viable alternative to the ER-as-NAI mantra.

4.3.1   Subjectivity

Individuals have privileged and exclusive access to certain information about themselves, through senses and introspection: (A) mental states, e.g. having a desire, (B) feelings, e.g. being angry or sad, (C) some bodily sensations, e.g. pain or hunger. Self-knowledge obtained via these channels is *incorrigible*: the experiencer has a special epistemic status and others have no grounds to deny such knowledge.[51] If I am, say, tired, I am the one and only authority over this state of mine.[52] The cases of pain and hunger are especially interesting. Despite the existence of physiological cues that may indicate whether a person is in pain or experiences hunger, there is no dependable way to measure this externally. The best strategy is to rely on self-assessment.

I will call linguistic expressions that describe such experiences as above *subjective*. The category of Subjective Content (SC) includes, e.g., first-person (A) attitude reports (*I hope*),

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51. I am not taking sides in the debate on the infallibility—complete immunity to error—of such self-knowledge (see e.g. (Aydede 2013) on pain). Of importance here is that only the experiencer has access to certain experiences, regardless of whether it is logically possible for them to be mistaken.

52. Bodily awareness isn't always incorrigible (de Vignemont 2015). Even though proprioception offers a unique experience of one's body, mistakes about e.g. spatial orientation are possible and may be corrected by others. For instance, if I am riding a roller-coaster with my eyes closed, I may come to a conclusion via proprioception that I am upside down. But I may be deceived by vertigo, and my fellow riders may tell me that I am, in fact, upright.

(B) taste ascriptions (*It tastes good to me*), (C) psych verbs (*I am excited*), and (D) statements about pain (*It hurts*).[53,54] I demonstrate, using conversational disagreement as an example, that some features of the linguistic behavior of SC stem from intrinsic properties of the experiences it talks about.

4.3.2 Non-challengeability of SC

Incorrigibility of knowledge obtained via subjective experiences restricts the range of reactions to SC in the following way. Only the experiencer has access to said experiences, so genuine disagreement is impossible:

(144)   FIRST-PERSON PAIN REPORT

    A.   **I** have a splitting headache.

    B.   #No, that's not true.

By virtue of self-knowledge about pain being incorrigible (a non-linguistic fact), B cannot felicitously disagree (a linguistic fact) with A about A's pain (144).[55] In cases of third-person pain reports (145), the speaker and the addressee both have low epistemic status, and non-challengeability evaporates:

(145)   THIRD-PERSON PAIN REPORT

    A.   **Mo** has a splitting headache.

    B.   ✓No, that's not true.

    Other subjective expressions exhibit the same pattern with respect to the non-challengeability of first-person statements (146, 148) and the lack thereof for their third-person counterparts (147, 149).

(146)   FIRST-PERSON PSYCH PREDICATE

    A.   Sauerkraut disgusts **me**.

    B.   #That's not true.

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53. The notion is broader than the usually recognized first-person content such as attitudes 'de se' (Moltmann 2012).

54. The category also includes predicates of personal taste and epistemic modals. Especially with regards to (dis)agreement, they exhibit additional properties so I will mostly postpone discussing them until Chapter 6.

55. B may disagree with (144) if B thinks that A (a) is being insincere or (b) is not correctly assessing their own experience. I ignore such pragmatically odd situations until section § 4.5.

(147) THIRD-PERSON PSYCH PREDICATE

    A. Sauerkraut disgusts **all vegans**.

    B. ✓That's not true.

(148) FIRST-PERSON BELIEF REPORT

    A. **I** think that there is life on Mars.

    B. That's not true.

(i)   = ¬ [There is life on Mars] **complement**
(ii)   ≠ ¬ [You think there is life on Mars] **belief report**

(149) THIRD-PERSON BELIEF REPORT

    A. **Mo** thinks that there is life on Mars.

    B. That's not true.

(i)   = [There is life on Mars] **complement**
(ii)   = [Mo thinks there is life on Mars] **belief report**

SC resists third-party assessment in general, which is responsible for its non-challengeability in dialogues. Therefore, non-challengeability does not uniquely diagnose NAI (Anand (2007: 203) makes a similar point).[56] Still, subjectivity is not brought up in the literature on conversational dynamics (Simons et al. 2010; Tonhauser 2012).

On the other hand, that subjectivity bans disagreement is explicitly acknowledged for epistemics (*likely*) and predicates of personal taste (*delicious*). While it is possible to disagree with e.g. PPT-statement, the disagreement is of a different nature:

(150) A. Sauerkraut is disgusting.

    B. ✓No, it is delicious.

Dialogues as in (150) are referred to as *faultless disagreement* (Kölbel 2003), a situation when the two parties disagree without one of them being strictly wrong. B's statement is only felicitous so long as B is making a claim about oneself or a generic statement (≈ 'People in general like sauerkraut'). Such a *No* never contests the speaker's epistemic state or perception, a move

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56. (148) is susceptible to an explanation along the lines of (Simons 2007): the proferred content, but not the matrix verb, constitutes the main point of an utterance (see also Frazier and Clifton 2005: Experiments 7a and 7b). Such an analysis fails to predict (A) the contrast between first- and third-person attitudes with respect to disagreement: both are predicted to be non-challengeable, and (B) the pattern exhibited by SC across the board. In e.g. (144) and (147) one's headache and preferences are clearly at-issue as the sentences can answer questions about, respectively, one's well-being and likes.

deemed infelicitous precisely on the grounds I discuss—these are private experiences (Stephenson 2007a; Anand 2009; von Fintel and Gillies 2011).[57] Subjectivity also predicts the infelicity of *No* in reply to a PPT-statement with an overt experiencer, such as *LA is fun to me*. I discuss faultless disagreement in greater detail in Chapter 6.

4.3.3   ER as SC

In all incarnations of the ER-as-NAI view outlined in §4.2, the speaker's having acquired *p* in a particular way is treated as an objective fact. That this information has to be channeled as NAI seems to be an arbitrary property of grammar, and things could have been otherwise. I present an alternative view wherein the non-challengeability of some elements is a direct effect of what they describe. This view preserves Faller's (2002) and Murray's (2010; 2014) intuition that the ER is discourse-new, but does so without wading into the NAI waters.

Informal intuition

Recall that it is illicit to deny the ER. The pattern in question is repeated in (151) below:

(151)   German (Germanic)

A. Es **soll**   regnen   am   Wochenende.
   It   REP.3SG.PRES rain.INF at.DAT.DEF weeekend
   'It will rain on the weekend, *I hear*'.
   ≈'It is supposed to rain on the weekend.'

B. Nein, das   stimmt   nicht.
   No   that.NOM be.true.3SG.PRES NEG
   'No, that's not true'

(i)   = ¬ [It will rain] **p**
(ii)   ≠ ¬ [You heard that it will rain] **ER**
(iii)   ≠ ¬ [I/we heard that it will rain] **faultless disagreement**

The hearsay use of German *sollen* (≈'must') (Ehrich 2001) also exhibits non-challengeability (Faller 2007).[58] I propose that this universal pattern is amenable to a subjective analysis.

   Acquisition of some proposition is always associated with a mental state formed thereafter. Some *conjectural* and *inferential* evidentials, e.g. Cuzco Quechua *=chá* (2c), refer to mental

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57. It has been pointed out to me that the following dialogue may instantiate genuine disagreement about taste:

(i) A. This game is no fun.

   B. Yes it is, you are not doing it right.

I argue that (i) is also a case of faultless disagreement: B says that the game is enjoyable by people in general and will be seen as such by A if done right. There is no disagreement as to what A experiences at the moment.
58. (i) has been pointed out to me as a case of an apparent contradiction to the claim about the non-challengeablity of *sollen*:

states directly by indicating that the scope proposition was acquired via reasoning from general knowledge. Other evidentials describe mental states mediated by perception.

(A) *Direct* evidentials such as Cuzco Quechua =*mi* (2a, 137) involve immediate perception.

(B) *Hearsay* evidentials such as Cuzco Quechua =*si* (2b) and German *sollen* (151) denote having heard (or read) a report.

(C) *Indirect* evidentials—ones denoting either hearsay or inference from results, such as Bulgarian -*l* and Turkish *mIş* (discussed in section § 4.4 below), as well as Georgian evidential past (143)—refer to, respectively, perceiving results or reports.

Whichever the channel, denying that the speaker acquired the scope proposition in a given way amounts to questioning their introspection and perception—and this, in turn, is infelicitous.

Note that similar effects in fact hold for English. Even though the language lacks grammatical evidentials, information source can be signalled by other means that are likewise non-challengeable. Consider the following dialogue:

(152) A. I saw that it hailed.

B. No, that's not true.
(i) $= \neg$ [It hailed] **complement**
(ii) $\neq \neg$ [You didn't see that it hailed] **perception report**

Just like in the case of grammatical evidentials and a broad spectrum of subjective expressions, B's denial can only target the fact of hailing. It cannot target A's seeing it (even though from a linguistic point of view, perception is at-issue). Regardless of what B thinks the speaker has observed, only A, the actual speaker, has access to their perception.

It has been noted to me that the following dialogue is possible:

(153) A. I saw David Bowie last night.

B. You did not, he died months ago.

I argue that in (153), the denial targets the content of what was seen rather than perception itself. For what it's worth, A could have been hallucinating and B is trying to convince A that they are wrong.

(i) A. David Bowie soll   am   Wochenende hier spielen.
     David Bowie REP.3SG.PRES at.DAT.DEF weeekend   here play.INF
     'David Bowie is playing here on the weekend, *I hear*'
     ≈'David Bowie is supposed to play here on the weekend.'

B. Nein, David Bowie ist   tot.
     no   David Bowie be.3SG.PRES dead
     'No, David Bowie is dead.'

In (i), the addressee is overtly disagreeing only with the scope proposition, but not with the speaker's reported evidence for that, and thus is the same as (151).

Formal implementation

Below I lay out the formal proposal that captures subjectivity. Before I do that, I want to spell out my general assumptions about evidentials.

I analyze evidentials as having an indexical component such that Origo is in many ways similar to *I*. I choose this particular implementation of the obvious context-sensitivity of evidentials because they do not exhibit judge-dependence (Chapter 6) and because of the cross-linguistic patterns of evidential shift (Chapter 7). Nothing in particular hinges on this implementation for the purposes of explaining away the disagreement.

I assume the Kaplanian view on indexicals as expressions that directly refer to the context coordinates:

(154) $c_k = \langle author, hearer, location, \ldots, world \rangle$

(155)   a. $[\![\text{ I }]\!]^{c,i,g} = \text{AUTHOR}(c)$

      b. $[\![\text{ you }]\!]^{c,i,g} = \text{HEARER}(c)$

      c. $[\![\text{ here }]\!]^{c,i,g} = \text{LOCATION}(c)$

I treat Origo as a dedicated context coordinate, whose value in root clauses is the same as that of Author:

(156) $c = \langle author,\ hearer,\ \textbf{\textcolor{orange}{origo}},\ location,\ \ldots,\ world \rangle$

(157) $\text{ORIGO}(c^*) = \text{AUTHOR}(c^*)$

I treat evidentials as sentential operators that take propositional arguments. Applying this view to *sollen*, this yields the following LF for the evidential sentence in (151):

(158)   a.   Es **soll**   regnen   am   Wochenende.
           It   REP.3SG.PRES rain.INF at.DAT.DEF weeekend
           'It will rain on the weekend, *I hear*'.

      b.   LF: [*sollen* [it rain on the weekend]]

Below is the formal proposal I advocate for evidentials, in two variants, each including a derivation for (151). Each variant of the semantics derives the facts, but does so in a different way.

Deriving the non-challengeability: Variant I (159), repeated from (30), contains a generalized semantics for evidentials:

(159) $\llbracket \text{EV} \rrbracket^{c,i,g} = \lambda p.\, p(i) \wedge \text{ACQUIRE}(p)(Origo_c, w_c)$,
where ACQUIRE is a stand-in for predicates that specify how Origo learned the scope proposition

    (160) contains the first variant of a derivation for (151):

(160) **Variant I**
$\llbracket [\text{SOLLEN} [\text{ it rains }]] \rrbracket^{c,i,g}$
$= \llbracket \text{SOLLEN} \rrbracket^{c,i,g}(\lambda i'.\llbracket \text{it rains} \rrbracket^{c,i',g})$
$= 1$ iff it rains at $i \wedge Origo_c$ heard in w_c that it rains
$= 1$ iff it rains at $i \wedge Author_c$ heard in w_c that it rains

(160) analyzes (151) as making two contributions: asserting the scope proposition and asserting that Origo has heard the scope proposition.

    This variant directly appeals to the cognitive processes described by evidentials. In the case of (151), it is specific properties of perception that define the range of reactions. A reply of the form *No, that's not true* suggests that B has access to what A heard. But what A perceived via hearing is only accessible to A (a non-linguistic fact), therefore it is infelicitous for B to challenge (a linguistic fact) this knowledge. If B has been present when A heard the scope proposition, for instance, the two were listening to a radio forecast together, B can say so. But even that would not deny A's knowledge regarding what they think they heard.

Deriving the non-challengeability: Variant II (161), repeated from (32), contains a generalized semantics for evidentials:

(161) $\llbracket \text{EV} \rrbracket^{c,i,g} = \lambda p.\, p(i) \wedge \forall \langle x', w' \rangle \in \text{EPIST}_{Origo_c, w_c} : \text{ACQUIRE}(p)(x', w')$,
where ACQUIRE is a stand-in for predicates that specify how Origo learned the scope proposition

    (162) contains the second variant of a derivation for (151):

(162) **Variant II**
$\llbracket [\text{SOLLEN} [\text{ it rains }]] \rrbracket^{c,i,g}$
$= \llbracket \text{SOLLEN} \rrbracket^{c,i,g}(\lambda i'.\llbracket \text{it rains} \rrbracket^{c,i',g})$
$= 1$ iff it rains at $i \wedge \forall \langle x', w' \rangle \in \text{EPIST}_{Origo_c, w_c} : x'$ heard in w' that it rains
$= 1$ iff it rains at $i \wedge \forall \langle x', w' \rangle \in \text{EPIST}_{Author_c, w_c} : x'$ heard in w' that it rains

(162) says that (151) makes two contributions: it asserts the scope proposition and asserts that, for all Origo knows in the world of evaluation, Origo has consciously heard the scope proposition.

This variant directly encodes subjectivity into the semantics of evidentials. It says that the ER is an attitude 'de se' of the form 'For all Origo knows, Origo heard that it would rain'. Denying such statements is infelicitous and is a general property of first-person attitude reports, as shown by examples such as (148).

If explicit performatives (*I promise*) are true by say-so, linguistic subjectivity can be described as true by *feel-so*: *It hurts* is true if the speaker is sincere. The ER, under the view presented in (159) and (161) above, behaves the same way and thus is non-challengeable. Faller (2002), who likens the ER to mental acts of evaluation, observes this parallel between performatives and evidentials. However, Faller does not discuss linguistic and non-linguistic subjectivity, and derives the non-challengeability of the ER from the level of meaning evidentials operate at, and not their lexical semantics. I argue that there is no need to appeal to speech acts to explain the non-challengeability, of evidentials and otherwise.

Garrett (2001: Chapter 4, 102-206), too, discusses the truth by say-so effects of evidentials and appeals to the privileged status of some information to describe constraints on what he calls *ego evidentiality* in Tibetan, a category that describes internal knowledge about a situation. The proposal I put forth is different. I argue that *all* evidentials denote experiences to which individuals have exclusive access, regardless of the source. Besides, the status of ego evidentiality as evidentiality proper is debated, and it may better fit under the egophorocity umbrella (Floyd et al. forth; discussed in greater detail in Chapter 8).

4.3.4   Recap

The landscape of disagreement patterns requires rethinking. I show that (not-)at-issue status is not the only source of impossibility of direct denials and that subjectivity is another plausible solution. To this end, I delineate an approach to evidentiality such that the speaker is the one and only authority over the way they acquired the scope proposition. This view derives direct denials equally well compared to the ER-as-NAI approaches. The next section discusses where the two options diverge.

4.4   Other types of denial

Direct denials of the form *No, that's not true* do not distinguish between NAI content and SC: both are non-challengeable. Thus, as far as evidentials are concerned, each line of analysis will get the direct denial data right. I show that the two different sources of non-challengeability yield different patterns with respect to other denial strategies and argue that evidentials pattern with SC.

NAI content is backgrounded, which limits the range of discourse operations applicable to it. In this case, form matters. Direct denials become possible if the same content is conveyed via regular clausal coordination. Direct denials are more likely (Syrett and Koev 2015: Experiment 2) for sentence-final appositives (163a) as opposed to non sentence-final ones (163b):

(163) a. The photographer took a picture of Catherine, **who is an experienced climber**.

  b. Catherine, **who is an experienced climber**, made it to the summit.

<div align="right">(Syrett and Koev 2015: App.A, ex.5)</div>

No, that's not true becomes more accceptable when directed at (163a) as opposed to (163b). To this end, Jasinskaja (2016) proposes that positional effects follow from a more general constraint on salience associated with propositional anaphora such as *that*: sentence-final content is more salient and therefore more accessible.

Additionally, special discourse moves are allowed to 'pick on' NAI. *Hey, wait a minute* (proposed by von Fintel (2004) for identifying presuppositions) may target appositives, and in fact prefers to. As Syrett and Koev's (2015) Experiment 1 shows, this sort of indirect rejection does not commonly target the main sentence content (77% for appositives vs. 23% for the main sentence).

SC, on the other hand, cannot be challenged across the board: the addressee has no epistemic authority for disagreement, and e.g. *Hey, wait, you are not* in reply to *I'm in pain* is bizarre at best.

The asymmetry in licensing disagreement can be used as a benchmark for evidentials. If some kinds of disagreement are allowed, it is an argument for the dominant ER-as-NAI view (§ 4.2). If denials are banned altogether, it is an argument for a subjective approach (§ 4.3):

Table 4.1: Licensing disagreement

	NAI	SC	ER
That's not true	☹	☹	☹
Other types of denial	✓	☹	**??**

Below I discuss novel data from Bulgarian (South Slavic) and Turkish (Turkic) on the availability of two kinds of denials, *No, that's not true* and *You are mistaken*, for (A) NAI: presuppositions and appositives, (B) SC: pain and attitude reports, and (C) evidentials. None of these expression types allow *No, that's not true*. *You are mistaken*, being more flexible than propositional anaphora, may target NAI but, given the lack of epistemic authority on part of the addressee, cannot target SC. Evidentials ban both reactions.[59]

4.4.1 Denial and NAI

In both Bulgarian and Turkish, presuppositions introduced by *too* (164, 165) and the content of appositives (166, 167) can be disagreed with using *You are mistaken* (with a follow-up

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59. I avoid using 'Hey, wait a minute' for methodological reasons: the cross-linguistic validity of this test as a NAI diagnostic is yet to be established. In particular, the test may not have a direct equivalent in other languages and the results are controversial even for e.g. presuppositions.

specifying what the mistake is about) but cannot be targeted by direct denial (even with a follow-up).[60]

Presuppositions: too

(164)   Bulgarian

    A.   Kalifornija **săshto** legalizira   marixuana-ta
        California   **too**   legalize.PST marijuana-DEF
        'California, too, legalized marijuana'.

    B.   Ne, ne e   vjarno.
        No NEG be.3SG.PRES true
        'No, that's not true'.

(i) $= \neg$ [California legalized] **assertion**
(ii) $\neq \neg$ [Some other state legalized] **presupposition**
    (even with a continuation *No other state legalized marijuana*)

    B'. Bărkaš.
        be.mistaken.2SG.PRES
        'No, you're mistaken'.

(i) $= \neg$ [California legalized] **assertion**
(ii) $= \neg$ [Some other state legalized] **presupposition**
    (with a continuation *No other state legalized marijuana*)

(165)   Turkish

    A.   Kaliforniya **da** otu   yasallaştır-dı
        California   **too** weed legalize-PST
        'California, too, legalized marijuana.'

    B.   Hayır. Bu doğru değil.
        no   this true NEG
        'No. That's not true'.

(i) $= \neg$ [California legalized] **assertion**
(ii) $\neq \neg$ [Some other state legalized] **presupposition**
    (even with a continuation *No other state legalized marijuana*)

    B'. Yanıl-ıyor-sun.
        be.mistaken-PROG-2SG
        'You're mistaken'.

(i) $= \neg$ [California legalized] **assertion**
(ii) $= \neg$ [Some other state legalized] **presupposition**
    (with a continuation *No other state legalized marijuana*)

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60. As translations show, English behaves the same way.

Both rejection strategies can target the assertion and, without a follow-up, prefer to. With a follow-up, however, *You're mistaken* may target the presupposition introduced by *too*. *That's not true* is more constrained and, even with a follow-up, cannot target the presupposition.

Appositives

(166)   Bulgarian

   A.   Kalifornija, **naj-golemijat štat**, legalizira   marixuana-ta
        California   **the.largest**   **state** legalize.PST marijuana-DEF
        'C., the largest state, legalized marijuana.'.

   B.   No, that's not true.

(i) $= \neg$ [California didn't legalize] **main sentence**
(ii) $\neq \neg$ [California is the largest state] **appositive**
        (even with a continuation such as *Alaska is the largest state*)

   B'.   You're mistaken.

(i) $= \neg$ [California didn't legalize] **main sentence**
(ii) $= \neg$ [California is the largest state] **appositive**
        (if there is a continuation such as *Alaska is the largest state*)

(167)   Turkish

   A. Kaliforniya, **Amerika'nin en   büyük eyaleti**, otu   yasallaştır-dı
      California   **America.GEN most big   state**   weed.ACC legalize-PST
      'California, America's largest state, legalized marijuana.'

   B. No, that's not true.

(i) $= \neg$ [California legalized] **main sentence**
(ii) $\neq \neg$ [California is the largest state] **appositive**
        (even with a continuation such as *Alaska is the largest state*)

   B'. You're mistaken.

(i) $= \neg$ [California legalized] **main sentence**
(ii) $= \neg$ [California is the largest state] **appositive**
        (if there is a continuation such as *Alaska is the largest state*)

Both rejection strategies can target the main sentence and, without a follow-up, prefer to. With a follow-up *You're mistaken* may target the content of an appositive. *That's not true* is more constrained and, even with a follow-up, cannot target the appositive.

In (166) and (167), sentence-medial appositives are used in order to compensate for potential positional effects. Given that this position does not facilitate denials, unlike the sentence-final position in English (which would be especially interesting to test in languages with a

different word-order pattern, such as Turkish), the contrast between the two strategies is even more marked.

4.4.2 Denial and SC

In both Bulgarian and Turkish, first-person pain (168, 169) and attitude (172, 173) reports ban all kinds of disagreement, while their third-person counterparts can be disagreed with using both strategies in question. This is the same pattern as the one discussed for English in § 4.3.

First-person pain reports

(168)   Bulgarian

    A. Glava-ta   **me** boli   strašno
       head-DEF.SG.F **I.**DAT ache.3SG.PRES awfully
       'I have an awful headache'.

    B. #No, that's not true.

    B'. #You are mistaken.

(169)   Turkish

    A. Can-**ım**   yan-ıyor
       life-**1SG.POSS** burn-PROG
       'I am in pain; lit. My life is burning'.

    B. #No, that's not true.

    B'. #You are mistaken.

Third-person pain reports

(170)   Bulgarian

    A. **Lora** **ja**   boli glava-ta   strašno
       Laura **she.**DAT ache head-DEF.SG.F awfully
       'Laura has an awful headache'.

    B. ✓No, that's not true.

    B'. ✓You are mistaken.

(171)   Turkish

    A. **Can-ın**   can-**ı**   yan-ıyor
       John-GEN life-**3SG.POSS** burn-PROG
       'John is in pain; lit. John's life is burning'.

    B. ✓No, that's not true.

    B'. ✓You are mistaken.

With first-person pain reports, no kind of denial, regardless of the strategy used, is acceptable. With the third-person cases, the situation is reverse, and both types of denial are possible.

First-person hope ascriptions

Denials sometimes may target attitudinal complements (see e.g. (149) above). In the case of *hope*, however, it is pragmatically odd to evaluate the truth of one's aspirations, so only reactions that target the entire sentence are included in (172)-(175) below.

(172) Bulgarian

    A. Nadjava-**m** se   [če   Tramp šte spečeli].
        hope-**1SG**   REFL [COMP Trump FUT win   ]
        'I hope that Trump will win.'

    B. #No, that's not true.

    B'. #You are mistaken.

(173) Turkish

    A. [Tramp-in   kazan-cağ-ın-ı   ] um-uyor-**um**
        [Trump-GEN win-NMLZ-3SG.POSS-ACC] hope-PROG-**1SG**
        'I hope that Trump will win'.

    B. #No, that's not true.

    B'. #You are mistaken.

Third-person hope ascriptions

(174) Bulgarian

    A. **Republikanci-te**   se   nadjava-**t** [če   Tramp šte spečeli].
        Republican.PL-DEF REFL hope-**3PL** [COMP Trump FUT win   ]
        'The Republicans hope that Trump will win.'

    B. ✓No, that's not true.

    B'. ✓You are mistaken.

(175) Turkish

    A. **Can**   [Tramp-in   kazan-cağ-ın-ı   ] um-uyor
        John [Trump-GEN win-NMLZ-3SG.POSS-ACC] hope-PROG
        'John hopes that Trump will win'.

    B. ✓No, that's not true.

    B'. ✓You are mistaken.

The situation with attitude ascriptions is the same as the one with pain reports: first-person statement ban all kinds of disagreement, and their third-person counterparts can be targeted by both strategies in question.

4.4.3 Denial and the ER

In Bulgarian and Turkish, evidentiality is morphologically part of the tense system. Indirect evidential morphemes *-l* (Bulgarian; Izvorski 1997) and *-mIş* (Turkish; Slobin and Akşu 1982) denote, depending on the context, either inference from results or hearsay. The ER contributed by each morpheme cannot be challenged using either of the strategies in question (176, 177):

Context 1, hearsay: I read a note in LA Times.
Context 2, inference: I come to Venice Beach. Lots of people are smoking weed.

(176) Bulgarian

    A. Kalifornija legalizira-**l**-a   marixuana-ta
       California legalize-IND.PST-F marijuana-DEF.SG.F
       'California legalized marijuana, *I hear/infer*'.

    B. That's not true.

(i) $= \neg$ [California legalized] **p**
(ii) $\neq \neg$ [You hear/infer it] **ER**

    B'. You are mistaken.

(i) $= \neg$ [California legalized] **p**
(ii) $\neq \neg$ [You hear/infer it] **ER**

(177) Turkish

    A. Kaliforniya otu   yasallaştır-**mış**
       California   weed legalize-IND.PST
       'California legalized marijuana, *I hear/infer*.'

    B. That's not true.

(i) $= \neg$ [California legalized] **p**
(ii) $\neq \neg$ [You hear/infer it] **ER**

    B'. You are mistaken.

(i) $= \neg$ [California legalized] **p**
(ii) $\neq \neg$ [You hear/infer it] **ER**

4.4.4 Recap

Table 4.2 below contains a detailed summary of applicability of the two disagreement strategies, *No, that's not true* and *You are mistaken* across different kinds of expressions in Bulgarian and Turkish:

Table 4.2: Licensing disagreement, itemized

	Not true	*Mistaken*
too (164, 165)	☹	✓(w/ follow-up)
appositive (166, 167)	☹	✓(w/ follow-up)
1-person pain (168, 169)	☹	☹
3-person pain (170, 171)	✓	✓
1-person hope (172, 173)	☹	☹
3-person hope (174, 175)	✓	✓
the ER (176, 177)	☹	☹

That *No, that's not true* and *You are mistaken* can target the scope proposition in (176) and (177) is predicted both by the NAI and the subjective view. What is surprising under the ER-as-NAI view is that *You are mistaken* can be directed at appositives and presuppositions but not at the ER, even with an explicit follow-up such as 'You didn't hear it', 'Nobody told you so', 'You don't infer it', 'You don't have evidence for it' and so on.

The NAI view on evidentiality—especially approaches that model appositives and the ER in the same fashion, such as (Murray 2014)—fails to predict and explain the pattern. If all types of NAI content were created equal, the difference would be a mystery. Using Jasinskaja's (2016) insight, one may argue that (a) *You are mistaken* requires a particular level of salience (see also the Givenness hierarchy; Gundel et al. 1993), and that (b) only the content of appositives, but not the ER, satisfies it. While analytically an option, this argument currently has no empirical basis. At the same time, evidentials clearly pattern with SC, which makes a subjective analysis presented in §4.3 not just possible but empirically advantageous.

The lesson learned from the data presented in this section is as follows. Denials make it possible to draw a line between NAI on the one hand and evidentials on the other. If the ER were a type of NAI content, at least *some* kinds of disagreement about content would be possible. This expectation is not borne out. The ER behaves in the same way as subjective expressions such as *I hope* in that disagreement is generally infelicitous:

Table 4.3: Licensing disagreement, revisited

	NAI	SC	ER
That's not true	☹	☹	☹
Other types of denial	✓	☹	☹

4.5 Performance disagreement

I argue that disagreement with SC is infelicitous because self-knowledge described by subjective expressions is not available to the addressee (a non-linguistic fact), so they have no reasonable basis to contest it (a linguistic fact). Such disagreement would signal that the addressee assumes being in a better position to evaluate the speaker's mental state than the actual speaker is. Under normal circumstances, such behavior is outright weird and possibly violates social norms. However, even though the weirdness is rooted in the lexical semantics of the items in question, which in turn is rooted in the qualities of experiences described, the ban is of a pragmatic nature. If so, under less-normal circumstances *some* kind of disagreement should be possible. The prediction is borne out.

It is possible to disagree with SC if the addressee thinks that the speaker is insincere or is impaired in judgment. Consider (178) below:

(178)   *Context: A stumbles on something and is lying on the floor in tears.*

   A. It hurts so much!

   B. No, it doesn't.

(178) is common in caretaker-child interactions. B may think that A is faking. Or B may deem A's reaction inappropriate as nothing really serious has happened. Either way, B is in disagreement with A. But the disagreement is not about the content of A's utterance: after all, B has no access as to what A truly experiences.[61] B is challenging the premises for said utterance. For instance, in cases of lying or assumed lying, A's behavior would be uncooperative.

I will call cases such as (178) *performance disagreement*: the situation when the addressee challenges not the content, but the speaker's performance and thus the grounds for an assertion (the term from (Anand 2009) on similar situations with taste ascriptions).

As section §4.4 shows, genuine disagreement is impossible with first-person statements about pain, first-person attitude ascriptions and evidentials. But performance disagreement is allowed. Another example comes from bouletics:

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61. I am not concerned here with brain-in-a-vat kind of scenarios where a third party might gain access to one's experiences. I focus not on the logical (im)possibility to assess someone's exclusive states, which is a question for philosophy of mind, but on particularities of dialogues that feature subjective expressions in worlds similar to ours.

(179) First-person desire:

    A. I want to get back with my ex.

    B. No, you don't want that.

(179) has been pointed out to me by a SemDial reviewer as an example of disagreement with subjective content. I argue that it is a case of performance disagreement. B's reply does not mean that B has gained access to A's mental state and is now in a position to assess what A wants. Instead, such a reply can be interpreted as an advice along the lines of 'You should not want that' or as an inconsistency on part of A along the lines of 'You may want to get back, but you may not want the consequences of it'. Crucially, none of it is genuine disagreement.

In the case of pain, both Bulgarian and Turkish allow dialogues like (178) in scenarios with children and caretakers. This use is highly restricted though, likely due to societal norms. It is infelicitous to challenge an adult's statement about their pain even if you think they are under anesthesia and should not feel anything.

Performance disagreement with attitudes (180) and evidentials (181) is exemplified below.

First-person hope ascriptions

(180) Bulgarian
Context: A is a devout Democrat.

    A. Nadjava-**m** se   [če   Tramp šte spečeli].
        hope-**1SG** REFL [COMP Trump FUT win   ]
        'I hope that Trump will win.'

    B. Ne, kazvaš go samo za provokacija
        no say.2SG it only for provocation
        'No, you say this only for provocation.'

In (180), B is challenging A's sincerity (or sanity).

Evidentials

(181) Bulgarian

    A. Teksas legalizira-**l**   marixuana-ta.
        Texas legalize-**IND**.PST marijuana-DEF.SG.F
        'Texas legalized marijuana, *I hear/infer*'.

    B. Njamaš   nikakvo osnovanie za tova. Prosto si   pijan.
        have.NEG.2SG no   ground for that just be.2SG drunk
        'You have no grounds for saying that. You're just drunk.'

In (181), B is challenging A's competence, suspecting they are drunk. Dialogues similar to (181) and (180) are also possible in cases of assumed hallucinations and other types of impaired

performance, or if the addressee thinks that the speaker is lying. To this end, consider the following Tagalog dialogue:

(182) Tagalog (Austronesian)
       Context: B has just been on the telephone with Florian.

   A. Ano   ang sinabi ni   Florian?
      what DEF said   DEF.GEN Florian
      'What did Florian say?'

   B. Nasa bahay **daw** si   Magda
      in   house REP DEF.NOM Magda.
      'Magda is at home *daw*.'

   C. Hindi totoo yun. Nasa bahay nga   si   Magda, pero hindi sinabi ni
      NEG   true that. in   house indeed DEF.NOM Magda, but NEG said   DEF.GEN
      Florian
      Florian
      'That's not true. Magda is at home indeed, but Florian didn't say so.'

                                        (adapted from Schwager 2010: 227-228, ex.13)

In (182), C is denying not the truth of the scope proposition (C agrees that it holds), but B's hearsay evidence for that. Based on the felicity of such type of dialogue, Kaufmann (in Schwager 2010) argues that Tagalog *daw* can be explicitly denied in the subsequent discourse, in contrast to evidentials in other languages.

   I propose that examples like (182) do not in fact contradict the claim about the universal non-challengeability of evidentials. According to my consultants, such examples require special pragmatic licensing. They can be used in scenarios wherein C had a pre-existing agreement with Florian such that he would not reveal Magda's location to B. In this case, C is effectively accusing B of lying, which is a case of performance disagreement rather than a general disagreement about content. The same situation holds for Bulgarian and Turkish.

   Another scenario that justifies dialogues such as (182) is where C witnessed B's conversation with Florian, for instance, via a conference call. In this case, denial is possible because C has hearsay evidence for the scope proposition. However, even in this case C has no access to what B thinks they heard, and thus cannot challenge it. This type of scenarios is also discussed with regards to example (151) in § 4.3.3.

   Summing up, evidentials pattern with subjective expressions even with respect to substandard disagreement. This new data point is not immediately handled in the current approaches to evidentiality.

4.6   General discussion

The non-challengeability of the ER has been one of the keystones of NAI approaches to evidentials. Based on the behavior of different types of content with respect to different types of

denial, I argue that the ER patterns with subjective expressions and not with NAI.

The main empirical contributions of the chapter are twofold. (A) Subjective content resists denial. Direct denial thus cannot be used as a two-way diagnostics that separates AI (=denial possible) from NAI content (=denial impossible). (B) In the case of SC, all kinds of denial render the infelicity of response, except for performance disagreement. Evidentials exhibit this very pattern.[62] In the case of NAI, denial is contingent on the strategy used: *You are mistaken* is allowed and *That's not true* is banned. I leave for future research investigating the source of flexibility of *You are mistaken*, as well as the behavior of other disagreement techniques such as *You're wrong* (which patterns with *That's not true* according to preliminary results).

The main theoretical claim is that the strong non-challengeability of the ER necessitates a subjective analysis of evidentiality. Certain experiences, such as mental states, are inherently first-person and thus incorrigible, i.e. immune to third-party assessment. In dialogues, these properties give rise to non-challengeability. Evidentials make reference to mental processes such as perception and reasoning, therefore it is only natural to treat them as subjective. I propose two versions of formalizing this intuition. The first version capitalizes on the properties of experiences described by evidentials, without encoding subjectivity directly in their semantics. The second version analyzes evidentials as an attitude 'de se' that explicitly talks about self-knowledge. In contrast to the NAI analyses, both versions correctly predict the impossibility of disagreement.

Furthermore, my approach has another empirical advantage over the NAI analyses. Disagreement is not the only diagnostic that differentiates between two types of content, the NAI and SC, in dialogues. Jasinskaja (2016) argues that, due to constraints on salience, NAI in general cannot be targeted by any kind of anaphora containing *that*, and not just direct denial. SC, on the other hand, has no such restrictions. For instance, in reply to my statement *I like kale* it is felicitous to say *That is surprising, I thought you didn't*. The NAI analyses of evidentiality predict that the ER should not be available to discourse operations. The subjective analysis that I put forth predicts that the ER cannot be subject to disagreement, but is otherwise available for propositional anaphora. As illustrated in (183) below, the ER can serve as an antecedent for discourse anaphors:

(183) Bulgarian

    A. Ana se   ozheni-**l**-a.
       Ana REFL marry-**IND.PST**-F
       'Ana got married, *I hear/infer*'.

    B. (Tova e)   Stranno. Tja mi kaza da   go pazja v tajna.
       (that be.3SG.PRES) weird   she me COMP say.PST it keep in secret
       'That's surprising. She told me to keep it as a secret.'

In (183), B is surprised not about the scope proposition, but about A's having learned about it. While I leave for future a more thorough study of discourse anaphora and evidentials, the

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62. At least the grammatical evidentials, in contrast with lexical means to express evidential meanings such as English *allegedly* and *reportedly*.

data point constitutes an additional argument against the ER-as-NAI approaches.

Recent research on conversational dynamics and on evidentiality does not take subjectivity into account. In particular, current approaches to evidentials incorrectly predict that evidentials should allow indirect denials and ban propositional anaphora with *that*. I have shown that subjectivity can be a source of non-challengeability. My approach correctly predicts that evidentials ban all kinds of denial and allow propositional anaphora. I thus propose two ways of disentangling NAI content and subjective content, which can have broader applications in research on the semantics and pragmatics of dialogue. They are summarized in Table 4.4 below:

Table 4.4: Disentangling NAI and SC

	NAI	SC
That's not true	☹/limited (S&K)	☹
Other types of denial	✓	☹
Non-denying propositional anaphora	☹	✓

✓denial possible; ☹ denial impossible

Appendix C: Answerhood

I have argued that non-challengeability—the supposedly key diagnostic for the NAI status of the ER—is not unique to NAI content. Additionally, answerhood is sometimes (REF) invoked in the literature to show that (a) the ER has a special discourse status and that (b) contributing NAI content is conventionalized for evidentials.

The empirical observation is as follows: the ER cannot be used to answer questions about information source. A sentence with an evidential in (184) below is not a felicitous reply to a question that seeks an answer about speaker's information source (Question 1). However, the same sentence can be used in replies as long as the question targets the scope proposition (Question 2):

(184)   Georgian
        #*Question 1: How do you know they built a new metro line in LA?*
        ✓*Question 2: Any news on public transportation in LA?*
        los-anʒeles-ʃi metro-s   axal-i   haz-i   **gauxvania**-t
        LA-in   metro-GEN new-NOM line-NOM construct.**IND:PST**-3PL:S
        'They constructed a new metro line in Los Angeles, *I hear/infer*.'

As discussed in § 4.2, the NAI-AI divide plays an important role in determining the range of possible answers to a question. In particular, only direct responses are classified as relevant to the current question, therefore an answer provided via the NAI content in the response would not count. If a piece of information *can* serve as an answer, it is indicative of its AI status. This is the case for the scope proposition of (184).

The reverse, however, needs not be true. That is, if a piece of information cannot be used as an answer, this fact is not indicative of its NAI status. To serve as answer, a piece of information also needs to be focussable (Beaver and Clark 2008). There are then at least two possible explanations for the impossibility of evidentials to answer questions about information source: (i) via NAI, and (ii) via constraints on focus. As Beaver and Clark show, focus is a varied category, and at least some constraints come from the grammar and vary across languages. Given that the interaction of evidentials and focus is in general a terra incognita, only future research may shed light on the nature of the response patterns illustrated in (184). It should be noted that the outcome will not challenge the major claim of the chapter. The disagreement facts are best explained via subjectivity and are not handled by the NAI theories of evidentiality.

Appendix D: Projection

Following Simons et al.'s (2010) and Tonhauser et al.'s (2013) idea that the not-at-issue status is the underlying reason for projection (=escaping the scope of various operators), the literature on evidentiality treats projection as indicative of the NAI status of the ER and often uses the terms 'projective content' and 'not-at-issue content' interchangeably (except for Koev (2011), who explicitly discusses the differences).

Newer research shows that projection and the not-at-issue status do not always go hand in hand. Therefore, the projective behavior, or lack thereof, does not have to be a reflection of a particular discourse status of an element in question. Apart from that, the behavior of evidentials in typical projection environments is largely understudied and thus cannot be used to determine what other semantic properties evidentials have. Below I briefly discuss (i) the property of projection, (ii) why it is not always the same as not-at-issue, and (iii) what is known about the projection of the ER.

Projection

Projection is a property of surviving under entailment-cancelling operators: α projects from under β just in case α escapes being in the scope of β despite being syntactically embedded under β. The property is exemplified in (185) below by the *Family of sentences test* (Chierchia and McConnell-Ginet 2000) applied to presuppositions.

(185) a. PLAIN SENTENCE
           Humpty Dumpty fell again.
           ↝ Humpty Dumpty fell at least once before.

       b. NEGATION
           Humpty Dumpty did not fall again.
           ↝ Humpty Dumpty fell at least once before.

       c. QUESTION
           Did Humpty Dumpty fall again?
           ↝ Humpty Dumpty fell at least once before.

       d. CONDITIONAL ANTECEDENT
           If Humpty Dumpty fell again, Alice has to go home.
           ↝ Humpty Dumpty fell at least once before.

The *Family of sentences* distinguishes presuppositions from other inferences of a sentence such as entailments and conversational implicatures by looking at environments known as *presupposition holes* (Karttunen 1973): negation (185b), questions (185c), and conditional antecedents (185d).[63] An inference is a presupposition if it survives in all these environments.

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63. In fact, conditionals are more tricky and presuppositions may not survive if what is presupposed by the antecedent is asserted by the consequent, so it is not true that they are just 'holes', but also 'filters', using Karttunen's original terminology.

Projection ≠ NAI

Traditionally associated with presuppositions, projection is also a property of a larger class of heterogeneous phenomena, such as expressives and appositives. Aiming to unify these seemingly unrelated elements, Simons et al. (2010); Tonhauser et al. (2013) postulate that projective behavior necessarily results from the not-at-issue status of an element in question. More recent research challenges this unification and suggests that the two notions—projection and at-issueness—should be kept distinct (see (Jasinskaja 2016) for a thorough discussion).

Syrett and Koev (2015) in a series of experiments demonstrate that position affects the (not-)at-issue status of non-restrictive relative clauses (NRC): the sentence-final position makes elements more available for explicit denial and direct questions—in other words, it makes them *more* at-issue (see also Nouwen 2007; Koev 2013; Brasoveanu, AnderBois, and Henderson 2015).

S&K's Experiment 2 investigates which part of the sentence is chosen as a target for explicit denials, the main clause or the NRC. Despite the overall preference for the main clause, sentence-final NRCs as in (186) were more likely to be chosen than their sentence-medial counterparts (187): 35.5% for the final position vs. 21.1% for the medial.

(186)   Sentence-final NRC

    A.   The photographer took a picture of Catherine, **who is an experienced climber**.

    B.   Main-clause denial:
       No, he didn't.

    B'.   NRC-denial:
       No, she's not.

<div align="right">(based on Syrett and Koev 2015: Appendix A, ex.5b)</div>

(187)   Sentence-medial NRC

    A.   Catherine, **who is an experienced climber**, made it to the summit.

    B.   Main-clause denial:
       No, she didn't.

    B'.   NRC-denial:
       No, she's not.   (based on Syrett and Koev 2015: Appendix A, ex.5a)

Note that the denials grammatically differentiate between the targets with the help of auxiliaries.

Experiment 3 investigates which part of the sentence is chosen as a target of a direct *Why?* question, the main clause or the NRC. Sentence-final NRCs as in (188a) were significantly more likely to be chosen than their sentence-medial counterparts (188a'): 67.1% vs. 29.6%.

(188) *Context: Adam has been practicing yoga for a little over a year now, and has been de-*
termined to learn how to do a headstand. In his mind, learning how to do a headstand
means he is on his way to having a serious yoga practice. His instructor told him to
practice it every single day. So for the last month, Adam has followed these instructions
and attempted a headstand every single day. In yoga class this morning, Adam got into a
headstand and held it for 30 seconds before exiting out of the pose.

Possible continuations

a. Sentence-final:
Adam has been learning to do a headstand, **which he was finally able to hold in his yoga class today**.

a'. Sentence-medial:
The pose Adam has been working on, **which he was finally able to hold in his yoga class today**, is a headstand.

Answer choices for test question: *Why?*

b. Main-clause:
Because he thinks of it as a sign of having a serious yoga practice.

b'. NRC:
Because he has practiced it every single day for a month.

(Syrett and Koev 2015: Appendix B, ex.8)

At the same time, the projective behavior of NRCs is not affected by their linear position. (189) below shows that both sentence-final (189a) and sentence-medial (189b) NRCs survive under negation:

(189) a. Sentence-final:
It is not the case that the photographer took a picture of Catherine, **who is an experienced climber**.

(i) $= \neg$ [The photographer did took a picture] **main clause**
(ii) $\neq \neg$ [Catherine is an experienced climber] **NRC**

b. Sentence-medial:
It is not the case that Catherine, **who is an experienced climber**, made it to the summit.

(i) $= \neg$ [Catherine made it to the summit] **main clause**
(ii) $\neq \neg$ [Catherine is an experienced climber] **NRC**

The bottom line is that projection alone is not an indicator of the discourse status, therefore, independent diagnostics are needed to show that an element in question is indeed not-at-issue.

Projective behavior of evidentials

Projection of evidentials has been discussed in the literature in relation to the kind of meaning they contribute. First, this notion is often conflated with scope. (190) highlights the differences between several logically possible interpretations of a syntactically simple sentence containing an evidential and a clause-mate operator ☆:

(190)   Surface syntax: [☆ [Ev p]]

    (i)   Projection:
          LF: [Ev p] ∧ [☆ p]

    (ii)   Narrow scope of the evidential:
          LF: [☆ [Ev p]]

    (iii) Wide scope of the evidential:
          LF: [Ev [☆ p]]

Second, the cross-linguistic picture is not clear even with respect to the *Family of sentences* test. Chapter 8 details the behavior of evidentials in questions, and below I discuss negation and conditionals.

Negation   The empirical pattern observed language after language is as follows: the ER is not affected by the clause-mate negation (de Haan 1997: 146-170). Instead, the evidential always outscopes negation:

(191)   Georgian
       sup'-i   ar   **gauk'etebia**
       soup-NOM NEG make.3SG:S.3SG:O.**IND:PST**
       $p =$ 'S/he made a soup'

    (i)   ≠ [I hear/infer p] ∧ [¬p] **projective interpretation**
          ≈ 'I hear/infer that she made a soup, and it is not that s/he made a soup'

    (ii)   ≠ ¬ [I hear/infer p] **narrow scope**
          ≈ 'It is not that I hear/infer that s/he made a soup'

    (iii) = [I hear/infer ¬p] **wide scope**
          ≈ 'I hear/infer that it is not that s/he made a soup'

It is often argued (Izvorski 1997; Koev 2011; Matthewson et al. 2007; Sauerland and Schenner 2007) that examples such as (191) instantiate projection. As Murray (2010) (but not Murray 2014) and Tonhauser (forth.) correctly point out, the only available interpretation is an instance of the evidential taking wide scope with respect to the clause-mate negation, which in

turn creates an illusion of projection.[64] The pattern illustrated in (191) is a problem for pre-suppositional analalyses of the ER. von Fintel and Gillies (2010) solve it by reformulating the evidential restriction on *must* as *The speaker does not have direct evidence for p and ¬p*, but admit that this is a placeholder.

If sentential negation has a fixed syntactic position (as is often assumed; Pollock 1989), the facts from (191) provide additional evidence for treating evidentials as high operators, a view compatible with Cinque's (1999) hierarchy (another piece of evidence comes from their embeddability; Chapter 3). These facts, however, do not differentiate between the modal and the illocutionary approaches to evidentiality, as under each type of approach evidentials end up high in the structure. This is yet another manifestation of the need to come up with better empirical diagnostics for both modal-like and speech-act like elements, which are currently lacking from the debate on the semantic status of evidentials within and across languages.

To establish the nature of interaction between negation and evidentials, it is necessary to look at the data on external negation, such as *It is not the case that*. These data are likely to be available only in languages where evidentials can appear in subordinate clauses (some of them listed in Chapter 3), and should be investigated with constraints on the interpretation of evidentials-in-attitudes in mind (of the sort discussed in Chapters 3, 5 and 7). While the cross-linguistic picture is yet to be established, just the right type of example is provided for Japanese by McCready and Ogata (2007):

(192)   Japanese
[konya   ame-ga   furi-**soo**   ] janai
[tonight rain-NOM fall.INF-**soo**] COP.NEG.PRES
$p =$ 'It will rain tonight'

(i) $\neq$ [it seems that p] $\wedge$ [$\neg p$] **projective interpretation**
$\approx$ 'It seems that it will rain, and it is not that it will rain'

(ii) $= \neg$ [it seems that p]; **narrow scope**
$\approx$ 'It is not that it looks like it will rain'

(iii) $\neq$ [It seems that $\neg p$] **wide scope**
$\approx$ 'It seems that it is not that it will rain'

(based on McCready and Ogata 2007: 170, ex.39)

The form *janai* is a result of the phonological contraction of *de wa* COP TOP + *nai* NEG.PRES. In (192), the evidential does not project and scopes under the copula. My Japanese consultants confirm this interpretation.

Aikhenvald (2004) mentions two putative counter-examples to the generalization that evidentials always outscope clause-mate negation. The first one comes from Warlpiri (Pama-Nyungan):

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64. Sharvit (2015) makes a similar observation about the pseudo-projective behavior of *only*.

(193) Warlpiri
       ngana-ngku mayi **nganta** paka-rnu
       who-ERG   Q   **REP**   hit-PST
       Original translation: 'I do not know who they reckon hit her'.
       My suggested translation: 'Someone (I don't know who) hit her, I hear'.

<div align="right">(Aikhenvald 2004: 97, ex.3.41)</div>

Aikhenvald (2004) takes (193) as an instance of NEG > EV, which is a misinterpretation of the data. *Mayi*, glossed in the original as *don't know*, is a question particle frequent especially in polar questions (Margit Bowler, p.c.). The combination of a *wh*-word and a question particle is a cross-linguistically common way to form *indeterminate pronouns* (term due to Kuroda 1965); see (Szabolcsi 2015) and references therein. Such pronouns can have a range of interpretations, which often includes ignorance or lack of interest on part of the speaker. I propose that (193) features a pronoun like this (found also in Japanese, Sinhala and Tlingit), hence the original translation *I do not know who*. Crucially, (193) is not an example of negation scoping above the evidential. More on evidentials and indefinites in Chapter 8.

The second putative example of NEG > EV comes from Akha (Tibeto-Burman):

(194) Akha (Tibeto-Burman)
       àjɔ̀q áŋ   dì   ə   àshú ɣà mà ŋa
       he   PRTCL beat PRTCL who   NEG VIS
       'I don't know/can't see who is beating him.'   (Aikhenvald 2004: 256, ex.8.38)

Aikhenvald claims that there is morphosyntactic evidence against treating ŋ*a* as a full-fledged verb. However, the sources cited (Hansson 1996, 2003) do not provide such evidence. Furthermore, it is not clear whether (194) could be susceptible to an analysis along the lines I propose for (193) above. If it is, the sentence in (194) would mean 'Someone (I don't know who) is beating him, I see'. Currently it is impossible to draw any solid conclusions from the two Akha examples (193 and also 3.39 from (Aikhenvald 2004: 97)), given that their internal structure and precise semantics are unknown.

Conditionals Evidentials-in-conditionals have not yet been investigated systematically. To my knowledge, there are no detailed case studies, so the cross-linguistic landscape is unknown.

For some languages the relevant data cannot be obtained, either because evidentials are banned from subordinate clauses altogether, as in Cheyenne (Murray 2010, Murray forth.), or because they cannot occur in conditional antecedents, as is the case in e.g. Cuzco Quechua (Faller 2002), Georgian (Korotkova 2012), St'át'imcets (Matthewson et al. 2007), and for some Tibetan evidentials (Garrett 2001; Kalsang et al. 2013).

Specifically for projection, currently available data show that evidentials do not exhibit a uniform pattern in conditional antecedents. In Japanese, evidentials may scope under *if* (McCready and Ogata 2007), though the pattern is only illustrated with conditional imperatives and not with regular conditionals.

In Tagalog, reportative *daw* exhibits the full spectrum of interpretations (Kierstead 2015). Exemplified in (196)–(198), the pattern is summarized in (195) below:

(195) Tagalog *daw* in conditionals

    (i) **wide scope**: [DAW [if *p*, then *q*] (196)

    (ii) **narrow scope**: [if [DAW *p*], then *q*] (197)

    (iii) **projective interpretation**: [DAW *p*] ∧ [if *p*, then *q*] (198)

As (196) shows, *daw* may take the entire sentence in its scope:

(196) Tagalog: wide scope
Context: John remembers there is some superstition about breaking a mirror, but doesn't exactly remember what it is. He asks his friend Bill to remind him. Bill says:
Kung makabasag ka   **daw** ng   salamin, magkakaroon ka   ng
if   break   you.DIRECT **REP** INDIR mirror   exist.CONT   you.DIRECT INDIR
pito-ng   taon-ng   bad luck
seven-LK years-LK bad luck
'It is reported that if you break a mirror, you will have seven years bad luck.'
= [DAW [if *p* then *q*] **wide scope**   (Kierstead 2015: 51, ex.22)

As (197) shows, *daw* may take narrow scope in conditionals:

(197) Tagalog: narrow scope
Context: I visit my grandmother, who is very forgetful. Sometimes she even forgets what she had for dinner the day before. I ask her how her dinner was yesterday. She says she can't quite remember what she had, and tells me to ask my grandfather. I ask her if my grandfather is actually reliable, or whether he might have forgotten too. She says I should trust what he says. For instance:
Kung kumain **daw** ako   ng   adobo, kumain ako   ng   adobo
if   ate   **REP** I.DIRECT INDIR adobo, ate   I.DIRECT INDIR adobo
'If it was reported that I ate adobo, then I ate adobo.'
= [if [DAW *p*], then *q*] **narrow scope**   (Kierstead 2015: 52, ex.23)

As (198) shows, *daw* may also project in conditionals:

(198) Tagalog: projective interpretation
Context: John believes that with roulette, he can sense what number will come up next with complete certainty. His friends Jenny and Sally decide to use his ability to make money off the casinos. John will sit in a corner waiting for his premonitions. Jenny will sit at the table and play roulette. Sally will go back and forth between the two, both to report John's premonitions, and just to chat so the casino doesn't catch on. They won't talk to anyone outside of their group to not get caught. Jenny is playing roulette, and Sally comes up next to Jenny, just as Jenny puts a bet that a red number will come up next. Sally says:

Kung pula **daw** ang   susunod, matutuwa tayo
if   red   **REP** DIRECT next.one joyful   we.INCL.DIRECT

'If the next one is red, as it was reported it would be, we'll be happy.'
= [DAW p] ∧ [if p, then q] **projective interpretation**
Consultant comment: Then [Sally] had to have talked to John [about the next being red].   (Kierstead 2015: 53, ex.24)

So far, the behavior of evidentials in conditional antecedents has only been used as a diagnostic of sorts, and even that has not been done systematically. Given how many puzzles conditionals pose as is (see (von Fintel 2011) for an overview of semantic issues and (Bhatt and Pancheva 2006) of syntactic ones), evidentials-in-conditionals warrant a dissertation-size study of its own. I leave it for future research.

CHAPTER 5

First-person authority and awareness in attitude reports

Abstract: This chapter is a companion to Chapter 4. Based on universal constraints that evidentials across languages exhibit in attitudinal complements, the chapter provides further empirical arguments for the subjectivity of evidentials. Specifically, I focus on the logically possible, but systematically not attested, interpretations wherein having evidence for *p* is ascribed to Origo by a third party. This new observation has no straightforward account in the current literature: some approaches overgenerate, while some others undergenerate. I argue that, just like in the case of conversational disagreement discussed in Chapter 4, the linguistic behavior of evidentials-in-attitudes is rooted in the non-linguistic properties of cognitive processes described by evidentials. Because these processes resist third-party assessment across the board, readings such that evidence is ascribed to Origo by a third party are banned in attitudes. I further show that evidentials are obligatorily 'de se' and derive that fact from subjectivity, thus offering a new route to 'de se'. This is in contrast to more standard approaches, which view 'de se' as an arbitrary property of grammar.

5.1   Introduction

This chapter talks about evidentials in attitudinal complements—configurations similar to the ones illustrated in (199) and (200) below:

(199) The Brawley Police Department believes that the driver was **allegedly** under the influence of alcohol based on information collected during the course of their investigation.[65]

(200) In the earlier interviews, Sanders mentioned that Clinton's campaign **apparently** won a series of coin tosses to resolve ties.[66]

Evidentials-in-attitudes are discussed in the literature only passim, except for (Garrett 2001; Sauerland and Schenner 2007; Schenner 2010a; Şener 2011). As a result, the range of their interpretations is poorly understood. Based on languages where evidentials are embeddable (in the sense discussed in Chapter 3), this chapter, together with Chapter 7, presents the first cross-linguistic investigation that aims to fill in this gap.

I start by laying out the analytical foundations of looking at evidentials-in-attitudes. The literature uses embedding under attitudes as a diagnostic that identifies the semantic status of an element in question. In particular, it has been argued that perspectival orientation unambiguously signals whether an element is modal or illocutionary. I show that this view dismisses several logically possible interpretations that may arise due to the different combinations of scope, projection and perspective—conceptually distinct parameters that have often been conflated.

I then focus on the previously unnoticed underlying uniformity exhibited by evidentials-in-attitudes. Regardless of their perspectival orientation, evidentials are subject to a constraint such that evidence for *p* cannot be ascribed to Origo by a third party. This restriction is not immediately handled by the existing approaches to evidentiality. I derive it from the same source as the lack of denial in dialogues in Chapter 4: the subjectivity of evidentials. I further show that embedded evidentials are subject to an awareness condition, a hallmark of 'de se' expressions. I argue that this pattern is naturally expected when subjectivity is in place, but has no direct account in the current literature.

The chapter is structured as follows. §5.2 lays out the core data. §5.3 reviews previous approaches. §5.4 shows that the formal proposal developed in Chapter 4 handles the relevant data. §5.5 is on 'de se'. §5.6 concludes.

5.2 Empirical landscape

This section discusses what evidentials mean when they occur in attitudinal complements and what they do not mean. As it often happens, it is the non-attested interpretations that serve as a window on semantics.

I start by introducing potential parameters of variation. I then show that not all of the logically possible interpretations are attested and demonstrate that there are universal constraints at play. First, evidentials always take narrow scope with respect to the attitude verb. Second, out of the four conceivable combinations of perspective and projection only two are attested.

There are several logically possible parameters of variation for evidentials-in-attitudes (cf. similar discussion in Schenner 2010a), each of which has two values:

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65. From http://goo.gl/STmVKk.
66. From *Fox News*; http://goo.gl/yn6lCC.

(201) 1. SCOPE

        (i) narrow scope: an evidential takes scope in the complement

       (ii) wide scope: an evidential takes scope over the entire sentence

    2. PROJECTION

        (i) does not project: an evidential is in the scope of the attitude predicate

       (ii) projects: an evidential escapes being in the scope of the attitude predicate

    3. PERSPECTIVE

        (i) speaker-oriented: Origo is the speaker

       (ii) subject-oriented: Origo is the attitude subject

Assuming that the parameters above are independent of each other, their various combinations result in a potential eight-way ambiguity for evidentials-in-attitudes. So, a sentence of the surface form as in (202, repeated from 78) can have LFs as in (203):

(202) Evidentials-in-attitudes: surface syntax
$[_{CP} \ldots$ attitude verb $\ldots [_{CP} \ldots \text{Ev} \ldots p \ldots]]$

(203) Evidentials-in-attitudes: LFs

    (i)   wide scope, does not project, speaker-oriented:
        $\text{Ev}_{SP} [\text{ATT} [p]]$

    (ii)   wide scope, does not project, subject-oriented:
        $\text{Ev}_{SUBJ} [\text{ATT} [p]]$

    (iii)   wide scope, projects, speaker-oriented:
        $\text{Ev}_{SP} [\text{ATT} [p]] \wedge \text{Ev}_{SP} \, p$

    (iv)   wide scope, projects, subject-oriented:
        $\text{Ev}_{SUBJ} [\text{ATT} [p]] \wedge \text{Ev}_{SUBJ} \, p$

    (v)   narrow scope, does not project, speaker-oriented:
        $[\text{ATT} [\text{Ev}_{SP} \, p]]$

    (vi)   narrow scope, does not project, subject-oriented:
        $[\text{ATT} [\text{Ev}_{SUBJ} \, p]]$

    (vii)   narrow scope, projects, speaker-oriented:
        $[\text{ATT} [p]] \wedge \text{Ev}_{SP} \, p$

    (viii)   narrow scope, projects, subject-oriented:
        $[\text{ATT} [p]] \wedge \text{Ev}_{SUBJ} \, p$

These parameters are frequently conflated in the literature, e.g. being speaker-oriented is often regarded as an equivalent of projection while being subject-oriented is often regarded as taking narrow scope (Matthewson et al. 2007; Matthewson 2012; Koev 2016). As I will show

in the next two sections, the parameters themselves are *conceptually* distinct, even though there are indeed correlations between perspective and (what looks as) projection (see § 5.2.2).

These correlations are not surprising. It is only natural that the world argument and the individual argument are yoked together. However, for the sake of argument, I will take the existing theories at face value and will show that in their current shape they overgenerate.

5.2.1 Scope

As discussed in Chapter 3, embedded evidentials always take scope in the complement clause. Those evidentials that take the entire sentence in their scope are not embedded. Consider the following example:

(204)   Cuzco Quechua
     Marya ni-wa-rqa-n   [Pilar chayamu-sqa-n]-ta=**mi**
     Marya say-1SG.O-PST1-3 [Pilar arrive-NMLZ-3]-ACC=**DIR**
     p = 'Pilar arrived'

    (i)   = [$_{CP}$ **Ev** Maria told me [$_{CP}$ p]] **wide scope**
        ≈ 'Origo has direct evidence that Maria told me that Pilar arrived.'

    (ii) ≠ [$_{CP}$ Maria told me [$_{CP}$ **Ev** p]] **narrow scope**
        ≈ 'Maria told me that Origo has direct evidence that Pilar arrived'
                                       (adapted from Faller 2002: 222, ex.183a)

In (204), direct evidential *mi* attaches to the outer edge of the nominalization and scopes over the entire sentence, as evidenced by (204i). The nominalization here is treated as a constituent in the main clause, for instance, it is assigned the accusative case. The evidential cannot "penetrate" inside it (a) semantically, by taking scope in the complement, as in (204i), or (b) syntactically, by attaching to a dependent of the nominalized verb (as illustrated in 122b).

Wide-scope readings as in (204i) are not available to evidentials that are genuinely embedded. This is illustrated by Georgian in (205, repeated from 77c):

(205)   Georgian
     maria pikrobs   [rom   mama mis c'odn-**ia**   xuti ena   ]
     Maria think.3SG.S:PRS [COMP father her know.3SG.S-**IND;PST** five language]
     p = 'Her father knew five languages'

    (i)   ≠ [$_{CP}$ **Ev** Maria thinks [$_{CP}$ p]] **wide scope**
        ≈ 'Origo hears/infers that Maria thinks that her father knew five languages'

    (ii) = [$_{CP}$ Maria thinks [$_{CP}$ **Ev** p]] **narrow scope**
        ≈ 'Maria thinks that Origo hears/infers that Maria's father knew five languages'

To sum up, the scope of syntactically embedded evidentials is always narrow, and thus this parameter does not correlate with projection and/or perspective. Misleadingly, the common practice is the literature is to group the behavior in attitudes together with other semantic diagnostics under the label of *Scope tests*[67] (Papafragou 2006; Faller 2002, 2007; Matthewson et al. 2007; Waldie et al. 2009; Matthewson 2012) and *Projection tests* (Murray 2010). Below I point out why this grouping is ill-chosen.

First, the scope of an element with respect to clause-mate operators is not related to its scope with respect to an attitude verb (and other higher-clause material):

(206) a. *Might* with negation:
        It might not be snowing.
        = *might* > **negation**: 'It might be the case that it is not snowing'
        ≠ **negation** > *might*: 'It is not the case that it might be snowing'

     b. *Might* with *think*:
        Alice thinks that it might be snowing.
        = *think* > *might*: 'Alice thinks that it might be the case that it is snowing'
        ≠ *might* > *think*: 'It might be the case that Alice thinks that it is snowing'

English epistemic *might* can take only wide scope with respect to clause-mate negation, as in (206a),[68] but only narrow scope with respect to an attitude predicate, as in (206b). Therefore, interpretation in attitudes should not be considered together with other scope tests: a priori, no correlations are expected.

Second, projective character of an inference, as identified via the *Family of sentences* test (see Chapter 4: Appendix D), may not manifest itself in attitude contexts in the same way:

(207) a. Negated sentence:
        The Caterpillar didn't stop smoking.
        ⤳ The Caterpillar was smoking.
        Cf. the infelicity of a follow-up: #But he wasn't smoking before.

     b. Complement of *think*:
        Alice thinks that the Caterpillar stopped smoking.
        ⤳̸ The Caterpillar was smoking.
        Cf. the felicity of a follow-up: ✓But he wasn't smoking before.

While the presupposition survives under negation in (207a), it does not have to project from under *think*,[69] as in (207b) (hence the term 'presupposition plug' used for *think*-type predicates; Karttunen 1973). Therefore, the interpretation in attitudes should not be grouped together with other projection tests.

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67. Often referred to as *Embedding tests*, in the sense of *semantic embedding*.
68. This applies to sentences with the default intonational contour.
69. Sentences with attitudes *may* have this inference, which raises questions related to projection in attitudes, as noted by Heim (1992); see (Sudo 2014) for a recent overview.

5.2.2 Perspective and projection

The literature on evidentiality does not formally distinguish between projection and perspective, and only two interpretations of evidentials-in-attitudes are usually discussed: (i) *speaker-oriented*, also referred to as projective, and (ii) *shifted*, also referred to as non-projective. While it is true that only two interpretations are attested, they are not the only ones that are logically possible. The ones that are absent are critical to the understanding of evidentiality. Their impossibility shows that evidentials are obligatorily subjective.

In the previous chapters, I have introduced my proposal for the semantics of evidentials. In this section, I will assume a simpler semantics for representational purposes. The point is to clarify the predictions made by the existing approaches. I will for now assume the following toy semantics for the evidential operator such that it is relativized to an individual, *evidential origo* (treated as a variable), and a world (cf. Sauerland and Schenner's (2007) semantics for Bulgarian reportative).

(208) $[\![\mathbf{Ev}]\!] = 1$ iff x in w acquired p in a particular way that is lexically specified by the evidential marker (direct perception, inference, hearsay, etc)

I will also assume the Hintikkan semantics for propositional attitudes (to be revised later), wherein predicates like *think* quantify over sets of worlds:

(209) $[\![think]\!]^{c,w,g} = \lambda p_{\langle s,t \rangle}.\lambda x_e.\lambda w. \forall w'$ compatible with what x thinks in w, $p(w')$

The worlds quantified over will be called *alternatives*, e.g. doxastic alternatives with *think*, bouletic alternatives with *wish*, epistemic alternatives with *know*, etc.

This gives the following truth conditions for a sentence with *think* (ignoring the semantic contribution, if any, of the complementizer):

(210) $[\![$ [Meaghan thinks [that space aliens exist]] $]\!]^{c,w,g}$
$= 1$ iff $\forall w'$ compatible with what Meaghan thinks at w, space aliens exist in w'

Let x^* be the speaker, w^* the world of evaluation, x_{ATT} the attitude subject and W_{ATT} the set of relevant alternatives, e.g. doxastic alternatives for *think*, $\text{DOX}_{x_{\text{ATT}},w^*}$. When evidentials are used in root clauses, $x = x^*$ and $w = w^*$. In embedded cases, there can be at least four interpretations:

Table 5.1: Logically possible interpretations for evidentials-in-attitudes

	$w = w^*$	$w \in W_{\text{ATT}}$
$x = x^*$	not shifted, projected; (211i)	not shifted, not projected; (211ii)
$x = x_{\text{ATT}}$	shifted, projected; (211iii)	shifted, not projected; (211iv)

(grey cells not attested, see below)

The crucial idea is that it is in principle possible to evaluate someone else's evidential state and that one can be mistaken about their own evidence. In other words, there is more than one way to be speaker-oriented and more than one way to be shifted.

The contexts below explicitly distinguish between these four interpretations:

(211) Pollux: 'Castor thinks [that **reportedly** [solar panels are efficient]]'.
$x^* = $ Pollux, $x_{\text{ATT}} = Castor$, $W_{\text{ATT}} = \text{DOX}_{Castor,w^*}$, $p = $'Solar panels are efficient'
$[\![(211)]\!] = 1$ iff $\forall w' \in \text{DOX}_{x_{\text{ATT}},w^*}$: **reportedly** p in w'

   (i)   **speaker-oriented, projected**: (attested)
      *Context: **The speaker** heard from many people that they are, **Castor** knows it for*
      sure.
      (211i) $\approx$ '**Castor** thinks that—and **I** heard it—solar panels are efficient.'
      LF: [**Castor** thinks [p]] $\wedge$ [$\text{Ev}_{SPEAKER}p$]
      $[\![(211\text{i})]\!]^{c,g}$
      $= 1$ iff $(\forall w' \in \text{DOX}_{Castor,w^*} : p$ in $w') \wedge (x^*$ heard p in $w^*)$
      $= (\forall w' \in \text{DOX}_{Castor,w^*} : $ s.p.efficient in $w') \wedge ($**speaker** heard in w^* that s.p.efficient$)$

   (ii) **speaker-oriented, not projected:** (not attested)
      *Context: But **the speaker** has never been not told so, and just infers it based on how*
      many neighbors go solar.
      (211ii) $\approx$ '**Castor** thinks that **I** heard that solar panels are efficient.'
      LF: [**Castor** thinks [$\text{Ev}_{SPEAKER}p$]]
      $[\![(211\text{ii})]\!]^{c,g}$
      $= 1$ iff $\forall w' \in \text{DOX}_{Castor,w^*} : x^*$ heard p in w'
      $= \forall w' \in \text{DOX}_{Castor,w^*} : $ **speaker** heard in w' that s.p.efficient

   (iii) **subject-oriented, projected:** (not attested)
      *Context: **The speaker** knows that **Castor** has been told it many times by neighbors.*
      He has forgotten about it and thinks that panels should be efficient because he gen-
      erally believes in green energy.
      (211iii) $\approx$ '**Castor** thinks that solar panels are efficient (and **he** heard it).'
      LF: [**Castor** thinks [p]] $\wedge$ [$\text{Ev}_{SUBJECT}p$]
      $[\![(211\text{iii})]\!]^{c,g}$

$= 1$ iff $(\forall w' \in \text{DOX}_{Castor,w^*} : p$ in $w') \wedge (\boldsymbol{x}$ heard p in $w^*)$

$= (\forall w' \in \text{DOX}_{Castor,w^*} : \text{s.p.efficient in } w') \wedge (\textbf{Castor}$ heard in w^* that s.p.efficient)

(iv) **subject-oriented, not projected:** (attested)
*Context: **Castor**, based on what he thinks his neighbors said, believes in solar panels' efficiency. He is in fact confused—his neighbors could not have said it as they aren't really into clean energy.*
(211iv) $\approx$ 'Castor thinks that, as he heard, solar panels are efficient.'
LF: [**Castor** thinks [$\text{Ev}_{SUBJECT}p$]]
$[\![(211\text{iv})]\!]^{c,g}$
$= 1$ iff $\forall w' \in \text{DOX}_{Castor,w^*} : \boldsymbol{x}$ heard p in w'
$= \forall w' \in \text{DOX}_{Castor,w^*} : \textbf{Castor}$ heard in w' that s.p.efficient

In (211i) and (211ii), the evidential is speaker-oriented. The difference between the two interpretations is as follows. In (211i), it is the speaker has reported evidence. In (211ii), it is the attitude subject who wrongly ascribes to the speaker having reported evidence. It is important that the speaker in this context does not think that they have this kind of evidence, otherwise the two readings would have been indistinguishable.

The shifted readings in (211iii) and (211iv) are constructed in parallel. While in both cases the evidential is oriented towards the attitude subject, Castor, the contexts differ in whether or not Castor thinks he has reported evidence. In (211iii), it is the speaker who ascribes having reported evidence to Castor. In (211iv), it is Castor who thinks he has reported evidence. In the world of evaluation, he does not. Again, it is important to distinguish between what is true in the world of evaluation and what holds in Castor's belief worlds, otherwise the two interpretations would be the same.

All of the interpretations above are *a priori* conceivable but not all of them are attested in natural language. Grey cells in Table 5.1 contain interpretations that are not available, (211ii) and (211iii). The pattern is illustrated below with an example from Turkish, a language where both non-shifted and shifted interpretations are possible:[70]

(212)   Turkish
Jay [Anna bir   köpek al-**mış**   ] di-yor.
Jay [Anna INDEF puppy get-**IND.PST**] say-PST
'Jay said that Anna got-MIŞ a puppy'.

(i)   SPEAKER-ORIENTED, PROJECTED, cf. (211i):
speaker thinks they have heard p
✓*Context 1: I was told by Mary, Anna's roommate, that Anna got a dog. Jay visited them recently and has seen the dog himself.*
$\approx$ 'Jay said that–*and I've heard it*–Anna got a puppy.'

(ii)   SPEAKER-ORIENTED, NOT PROJECTED, cf. (211ii):

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70. The fact that Turkish *mIş* can be speaker- and subject-oriented in attitudes was first shown by Şener (2011). However, as the rest of the literature, she does not make a distinction between Origo's having evidence and a third party ascribing evidence to Origo.

speaker thinks they have not heard p
 # Context 2: Jay visited Anna recently and found out that she finally got a dog. It's is exciting and he is sure that Anna has told me, as she wanted one for a long time. In fact, I was out of town and did not yet hear the news.
≈ 'Jay said that, *as he thinks I've heard*, Anna got a puppy.'

(iii)   SUBJECT-ORIENTED, PROJECTED, cf. (211iii):
attitude subject thinks they have not heard p
 # Context 3: I visited Anna recently and found out that she finally got a dog. It's is exciting and I am sure that Anna has told Jay, as she wanted one for a long time. In fact, she did call him, but he later forgot about it.
≈ 'Jay said that–*and he has heard it*–Anna got a puppy.'

(iv)   SUBJECT-ORIENTED, PROJECTED, cf. (211iv):
attitude subject thinks they have heard p
✓*Context 4: I recently visited Anna and found out that she finally got a dog. Jay hasn't visited yet, but she called him to share the news.*
≈ 'Jay said that, *as he has heard*, Anna got a puppy.'

The contexts in (212) distinguish between different types of speaker- and subject-oriented readings. This paradigm shows that the same constraint is at play for both of them: evidentials cannot be used in scenarios such that a third party ascribes having hearsay evidence to Origo. *mIş* can be speaker-oriented only if it is the speaker who thinks that they have heard the scope proposition. The opposite also holds: *mIş* can be subject-oriented only if Origo thinks that they have evidence of the relevant kind.

The same pattern is reproduced in languages where evidentials only have speaker-oriented readings in attitudes, such as Georgian (213), and in languages where evidentials only have subject-oriented readings, such as Korean (214). At the moment, I am not concerned with how to derive the variation in the availability of shifted readings or in the mechanism of evidential shift; see Chapter 7.

(213)   Georgian

maria	pikrobs	[rom	natasha-s	**codnia**	kartul-i	]
Maria.NOM	think.3SG.S.PRES	[COMP	Natasha-DAT	3SG.S.**IND.PST**	Georgian-NOM	]

(i)   SPEAKER-ORIENTED, PROJECTED, cf. (211i):
speaker thinks they have heard p
✓*Context 1: I've never met Natasha, who is a friend of a friend. Said friend told me that Natasha knows Georgian.*
≈ 'Maria thinks that—*and I was told it*—Natasha knows Georgian'.

(ii)   SPEAKER-ORIENTED, NOT PROJECTED, cf. (211ii):
speaker thinks they have not heard p
#Context 2: I've never met Natasha, who is a friend of Maria's, and generally know very little about her. Maria is sure she told me that Natasha knows Georgian.
≈ 'Maria thinks that *I was told that* Natasha knows Georgian'.

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The contexts in (213) distinguish between the two speaker-oriented readings. Georgian evidential past is only compatible with the one where the speaker thinks that they have hearsay evidence (213i). It cannot be used in a scenario wherein someone other than the speaker ascribes to the speaker having a certain kind of evidence about *p* (213ii): the evidential cannot be speaker-oriented and be evaluated with respect to the attitude subject's doxastic alternatives (the same also holds for e.g. Bulgarian).

The opposite situation is not attested either, which is illustrated with Korean below:

(214)   Korean: perception marker *te*
        Chelswu-nun [pi-ka   ecey   o-**te**-la-ko   ] malha-yess-e.
        Chelswu-TOP [rain-NOM yesterday fall-**DIR**-DECL-COMP] say-PST-DECL

   (i)   SUBJECT-ORIENTED, PROJECTED, cf. (211iii):
          attitude subject thinks they did not perceive *p*
          #*Context 1: Chelswu went outside during the rain yesterday. He somehow has forgotten it and thinks he only knows about the rain from his neighbors.*
          ≈ 'Chelswu said that—*and he has perceived it*—it was raining yesterday.'

   (ii)   SUBJECT-ORIENTED, NOT PROJECTED, cf. (211iv):
          attitude subject thinks they have perceived *p*
          ✓*Context 2: Chelswu spent all day sick, but thinks he went outside and saw the rain*
          'Chelswu said that, *as he has perceived*, it was raining yesterday.'

               (the example adapted from Lee (2013): ex. 22; the observation is my own)

The contexts in (214) distinguish between the two subject-oriented readings. Korean *-te* is only compatible with the one where the attitude subject thinks they have perceptual evidence for *p* (214ii). It cannot be used in scenarios wherein a third party ascribes to the attitude subject having a certain kind of evidence about *p* (214i): the evidential cannot be subject-oriented and evaluated with respect to the actual world. The same pattern also holds for Bulgarian and Japanese.

5.2.3   Recap

This section dissects what happens to evidentials in attitude reports. I discuss logically possible parameters of variation—an issue that has not been thoroughly covered in the literature. I point out that there is no *a priori* reason to expect that these parameters would be correlated and that there are at least eight possible interpretations for sentences with embedded evidentials. I then make a cross-linguistic claim and show that not all of these interpretations are attested.

First, embedded evidentials only take local scope, which eliminates four interpretations. I only focus on the empirical observation and do not propose a theoretical explanation, though the reason likely has to do with constraints on movement. In general, additional machinery would be needed to to derive wide-scope elements, while the narrow scope is only expected.

Second, I show that out of the four remaining interpretations of evidentials-in-attitudes

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two are systematically absent. At first glance, it might seem that in the attested interpretations the two variables x and w co-vary: either both of them are interpreted with respect to the matrix clause (211i; 212i; 213i) or both of them are interpreted with respect to the embedded clause (211iv; 212iv; 214ii). Mismatch interpretations as in (211ii; 212ii; 213ii) and (211iii; 212iii;214i) are not allowed even though nothing in (208) prohibits it. Sauerland and Schenner (2007) stipulate this fact for the Bulgarian reportative.

In what follows, I argue that the seeming co-variation is another manifestation of the subjectivity of evidentials: Origo is the one and only authority over their information source, the view I have defended in Chapter 4. In both of the unattested cases, someone attributes having evidence to another individual: the speaker to the attitude subject (211iii; 212iii; 214i) or the attitude subject to the speaker (211ii; 212ii; 213ii). In both cases, Origo does not think they have this kind of evidence, which is exactly why evidentials are ruled out.

As examples below show, there is a curious contrast between (a) grammatical evidentials discussed in the dissertation, and (b) expressions such as *be told*, seemingly expressing similar semantics as e.g. hearsay evidentials. The latter (but not the former) are perfectly acceptable in mismatch scenarios similar to (211ii) and (211iii):

(215)   a.   **speaker-oriented, non-projected:**
            Castor thinks that **I was told that** solar panels are efficient. However, nobody told me such a thing.

        b.   **subject-oriented, projected:**
            Castor thinks—**and he was told it**—that solar panels are efficient. He himself, however, does not remember being told so and bases his judgment on how popular they are among his neighbors.

The consequence for the theory is that semantics of evidentiality should be modelled in a way that predicts these restrictions.

5.3   Previous approaches

This section covers the ground both for this chapter and Chapter 7, because their material is interconnected. Here I specifically focus on how different approaches to evidentiality fare with respect to the *universals* of evidentials-in-attitudes. In the corresponding section in Chapter 7, I make a recap and concentrate on how to derive the *variation* in the availability of evidential shift.

I made the following empirical observation: across languages, evidentials-in-attitudes do not have interpretations wherein a third party ascribes to Origo having certain kind of evidence for the scope proposition. The systematic absence of these interpretations shows that experiences described by evidentials have the property of first-person authority and thus resist third-party assessment, which is independently shown by their behavior in root clauses. This is not brought up in any of the current theories of evidentiality.

Given the lack of proper discussion of evidentials-in-attitudes, the assumptions regarding

their interpretation are not fully spelled out. For instance, it is assumed in the literature that projection and perspective automatically should go hand in hand:

— if an evidential is in the scope of an attitude verb, Origo is expected to be subject-oriented;
— if an evidential projects (=escapes the scope), Origo is expected to be speaker-oriented.

It is further assumed that only modal evidentials scopally interact with the attitude verb while illocutionary evidentials are scopeless (=non-embeddable semantically). The facts are thus viewed as supporting the dichotomy view. In §5.2, I showed that projection and perspective are two distinct parameters. Theories without an explicit mechanism that ties the two together predict four interpretations for embedded evidentials (cf. 203):

(216) (i) does not project, speaker-oriented:
            $[\text{ATT} [\text{Ev}_{SP} \, p]]$

       (ii) does not project, subject-oriented:
            $[\text{ATT} [\text{Ev}_{SUBJ} \, p]]$

       (iii) projects, speaker-oriented:
            $[\text{ATT} [p]] \wedge \text{Ev}_{SP} \, p$

       (iv) projects, subject-oriented:
            $[\text{ATT} [p]] \wedge \text{Ev}_{SUBJ} \, p$

Below I outline ways of incorporating subjectivity into the existing theories. It is relatively easy to make modal theories to account for some of the facts because subjectivity is discussed a lot in the literature on modality, both in linguistics and in philosophy of language, which would correctly predict (216i). The main obstacle for such theories is deriving non-shifted or projected readings of any kind. However, assuming the dichotomy for a moment, it should not be a problem because illocutionary evidentials are supposed to not shift. However, a proper treatment of subjectivity within illocutionary approaches is problematic. Given that the mechanisms of embedding speech-act material are poorly understood, the predictions of such approaches are not clear-cut. I discuss further issues below.

5.3.1 Modal approaches

Recall from §2.2 that modal approaches to evidentiality treat evidentials as epistemic modals with an evidential restriction. Because epistemics shift in attitudes, it is claimed that evidential shift is indicative of the modal nature of respective evidentials. In Chapter 7, I argue for another analytical option, one where evidential shift is a variety of indexical shift. In this section, I concentrate on the mechanics of epistemics-in-attitudes (assumed, but never discussed in the literature on evidentiality) and on how it carries over to evidentials. I will show that because epistemics exhibit subjectivity effects similar to the ones discussed for evidentials, modal approaches can account for the lack of readings such that evidence is ascribed by a third party. The problem, discussed in detail in Chapter 7, is that such approaches undergenerate.

Modal approaches to evidentiality rely on two background assumptions. First, epistemics

are expected to scopally interact with attitude verbs.[71] For example in (217) below, embedded *might* indicates an attitude about possibility, and thus is in the scope of *convinced*:

(217)   Many TCU players remain convinced that tonight's game **might** be the most critical of the year.   ([Hacquard and Wellwood 2012](): 12, ex.25 and 27)

The second assumption is that epistemics always shift under attitudes. This is motivated by the behavior of epistemic modal auxiliaries, illustrated in (218):

(218)   Scylla thinks [that Odysseus' ship **might** pass Charybdis].

    a.   NON-SHIFTED, SPEAKER-ORIENTED: # …but Scylla is sure it would pass.

    b.   SHIFTED, SUBJECT-ORIENTED: ✓…but I am sure it would pass.

In (218), *might* under *think* necessarily reflects Scylla's knowledge, but not that of the speaker. It can be shown by the follow-ups: while the speaker can express a higher degree of certainty about p (218b), Scylla cannot (218b).

The facts on shift, first observed by [Stephenson]() ([2007b,a]()) and [Hacquard]() ([2006](), [2010]()), are not predicted by the Kratzerian semantics, which does not specify who is the knower that modals are relativized to. There is a number of different ways to formalize the idea that epistemics have to shift in attitudes and then to apply the same view to evidentials. It should be noted that modal approaches to evidentiality merely assume that modals shift and do not actually derive it.

Under Stephenson's account,[72] the relevant knower of epistemic modals is formally represented as a judge j, a parameter of the index. Consider the following lexical entry for *might*:[73]

(219) $[\![\text{might}]\!]^{c,\langle w,j\rangle,g} = \lambda p_{s,et}. \exists \langle w',x'\rangle$ compatible with what j knows in w, $p(w')(x')$
                                            (adapted from [Stephenson 2007b](): 44, ex.57)

In words, epistemic modals quantify over centered epistemic alternatives: world-individual pairs $\langle w,j\rangle$ such that it is compatible with what x knows in w for x to be x' in w'. This gives the following computation for a non-embedded case:

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71. The ability of epistemics to scopally interact with semantic operators has long remained controversial in the literature on modality, where epistemics are often attributed a special semantic status (see e.g. [Papafragou 1998](), [2000](), [2006]()). Using naturalistic data, [Hacquard and Wellwood]() ([2012]()) show that epistemics are interpreted in the scope of an attitude verb.

72. ([Stephenson 2007b,a]()) is a modification of [Lasersohn]()'s ([2005]()) view on predicates of personal taste and is meant to incorporate both taste predicates and epistemics. It is closely related to other versions of relativism, such as ([Egan, Hawthorne, and Weatherson 2005](); [MacFarlane 2014]()).

73. For the sake of simplicity, I ignore tense and treat index as a duple $\langle w,j\rangle$, not as a triple $\langle w,t,j\rangle$, which it is for Stephenson.

(220) a. Odysseus' ship might pass Charybdis

b. LF: [might [Odysseus' ship pass Charybdis]]

c. $\llbracket$Odysseus' ship might pass Charybdis$\rrbracket^{c,\langle w,j\rangle,g}$
   $= \llbracket$might$\rrbracket^{c,\langle w,j\rangle,g}$ ($\lambda w''. \lambda j''. \llbracket$O' ship passes Ch.$\rrbracket^{c,\langle w'',j''\rangle,g}$)
   $= 1$ iff $\exists\langle w',x'\rangle$ compatible with what j knows in w, O' ship passes Ch. in w'

The value of judge in non-embedded cases is determined contextually. When embedding is involved, the judge is set to the attitude holder by the following mechanism. In (209), attitude predicates are treated as quantifiers over worlds such that the world index is shifted from the world of evaluation to worlds compatible with the relevant alternatives' set. Stephenson adopts the treatment of attitude predicates as quantifiers over judge-centered worlds:

(221) $\llbracket$think$\rrbracket^{w,j} = \lambda p_{s,et}. \forall\langle w',x'\rangle$compatible with what j believes in w, $p(w')(x')$

<div align="right">(adapted from Stephenson 2007b: 43, ex.54)</div>

Under this view, the judge in embedded contexts is obligatorily the attitude subject. An illustration is provided below:

(222) $\llbracket$ Scylla thinks that Odysseus' ship might pass Charybdis $\rrbracket^{c,\langle w,j\rangle,g}$
   $= \llbracket$ thinks $\rrbracket^{c,\langle w,j\rangle,g}$ ($\lambda w''. \lambda j''. \llbracket$ O' ship might pass Ch. $\rrbracket^{c,\langle w'',j''\rangle,g}$) ($\llbracket$ Sc. $\rrbracket^{c,\langle w,j\rangle,g}$)
   $= 1$ iff $\forall\langle w',x'\rangle$ compatible with what Scylla believes in w,
      $\llbracket$O' ship might pass Ch$\rrbracket^{c,\langle w',x'\rangle,g}$
   $= 1 \ textupiff \ \forall\langle w',x'\rangle$ compatible with what Scylla believes in w,
      $\exists\langle w'',x''\rangle$ compatible with what x' knows in w', O' ship passes Ch. in w''

(assuming a particular relationship between knowledge and belief)

$= 1$ iff $\exists\langle w',x'\rangle$ compatible with what Sc. believes in w, O' ship passes Ch. in w'

The apparatus described above achieves the effect observed in (218): *might* has to shift under *think*. *Might* is obligatorily judge-dependent, and *think* obligatorily shifts the index, which contains the judge. As a result, all judge-dependent expressions must shift in the scope of *think* and other attitude predicates.

Hacquard (2006, 2010) achieves the same effect via making all modals event-relative and making the event variable obligatorily bound by the closest binder, according to Farkas's (1997) and Percus's (2000) constraints. Paired with Cinquean assumptions about the structural position of different modals (epistemics vs. deontics), this system yields the desired perspectival orientation of modal auxiliaries. Epistemics in non-embedded cases are relativized to the speech event, whose agent is the speaker, therefore they are speaker-oriented. Epistemics in embedded cases are relativized to an event introduced by the predicate, whose agent is the attitude holder, therefore they are shifted.

Yet another version of obligatory shift comes from Yalcin (2007, 2011), for whom *might* is relativized to an information state. In a somewhat stipulative way, in embedded cases the attitude subject serves as the relevant individual whose information state is tracked by the modal.

The intuition behind all these approaches is that embedded modals shift and that this shift is a direct consequence of the system, and not just an ad-hoc property of some expressions.

Returning to evidentials, it is easy to extend one of the analyses above to cover the relevant data. Here is a sample lexical entry that uses Stephenson's approach:

(223) $[\![\textbf{Ev}]\!]^{c,\langle w,j\rangle,g} = 1$ iff j in w acquired p in a particular way that is lexically specified by the evidential marker (direct perception, inference, hearsay, etc)

First, such an analysis would rule out speaker-oriented interpretations altogether. Second, it would capture the subjectivity of evidentials: among the shifted interpretations, only such as in (211iv) but not as in (211iii) will be allowed. Below is a reminder of what these interpretations look like:

(224) Shifted readings of evidentials

1. attested (211iv): Origo thinks they have certain kind of evidence

2. non-attested (211iii): A third party ascribes to Origo having certain kind of evidence

Per Stephenson, readings such as (224.2) are banned precisely by virtue of the semantics of attitude predicates and modals. All intensional quantification is performed over judge-centered worlds (cf. the standard treatment of attitudes 'de se' as involving quantification over centered worlds; Lewis 1979; Chierchia 1989; Pearson 2013b). Furthermore, under any approach epistemic modals deal with mental states and thus are subjective. Because only the individual oneself has access to what they know, it is impossible for a third party to access what it is. Consider (225, modified from 218):

(225) Scylla thinks [that Odysseus' ship **might** pass Charybdis].

a. SHIFTED, EVIDENCE ATTRIBUTED BY A THIRD PARTY: # ...Scylla is supposed to know that it may, given the breadth of the passage and Odysseus' skills. Scylla however doesn't think so.

b. SHIFTED, EVIDENCE ATTRIBUTED BY ORIGO: ✓...I am sure it would pass, but Scylla thinks that passage is a mere possibility and that it may not happen.

(225) above shows that *might* can only talk about Scylla's own judgment (225b), and it is impossible to use it in a situation wherein the speaker ascribes the knowledge judgment to the attitude subject (225a). As shown in § 5.2, evidentials behave the same. So as long as the

formal approaches to modality capture this restriction, modal approaches to evidentiality based on them would capture it, too, thus accounting for a half of the relevant data for evidentials-in-attitudes:

(226) (i) does not project, speaker-oriented:
            [~~Att~~ [~~Ev$_{SP}$ p~~]] **ruled out, not attested**

       (ii) does not project, subject-oriented:
            [Att [Ev$_{SUBJ}$ p]]

       (iii) projects, speaker-oriented:
            [~~Att [p]~~] ∧ ~~Ev$_{SP}$ p~~ **ruled out, not attested**

       (iv) projects, subject-oriented:
            [~~Att [p]~~] ∧ ~~Ev$_{SUBJ}$ p~~ **ruled out, attested**

The modal view fails to derive the attested speaker-oriented reading. The next section discusses how illocutionary approaches fare in this respect.

5.3.2 Illocutionary approaches

According to the dichotomy view, speaker-oriented readings in attitudes are necessarily indicative of the illocutionary status of evidentials.[74] Below I show that this premise is controversial. First, I show that in a version of Faller's (2002) analysis that would allow for embedding, the expectation would be for evidentials to shift. Second, I show that Murray's (2010) analysis overgenerates. While it easily allows evidentials to be speaker-oriented, it also does not disallow readings wherein evidence is ascribed to the speaker by a third party. To account for the ban, some notion of judge-dependence is necessary, which in turn raises the question of empirical differences between various theoretical options that are currently on the table.

Faller (2002)-style analysis   As discussed in 3.2.2.2, it is not a given that speech acts are not embeddable, which calls for a better explanation of the non-embeddability of some evidentials. In particular, I argue in (Korotkova forth.) that some evidentials are best analyzed along the lines of embedded speech acts à la (Krifka 2014), which allows for further embedding of such configurations.

In frameworks that allow speech act recursion (Haegeman 2012, 2014; Sundaresan 2012), embedded speech acts carry an illocutionary force of their own. In particular, discourse participants of an embedded speech act are not the same as the matrix speaker and addressee. Instead, it is the attitude subject who is the embedded speaker and whose discourse commitments are at stake.

In those frameworks, then, a discourse-sensitive element in the embedded clause would shift to the attitude subject (or at least have a shifted interpretation as an option). According

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74. Different authors talking about embedding evidentials are not always consistent: sometimes it is claimed that illocutionary evidentials cannot appear in attitude reports, sometimes it is claimed that illocutionary evidentials have to be speaker-oriented.

to Woods (2014), high adverbs, to the extent they are embeddable at all, obey this pattern:

(227)   English high adverbs: definitely

    a.   Marie **definitely**$_{SPEAKER}$ will be at the party.   (Woods 2014: 212, ex.17c)

    b.   **John** told Harry that Marie **definitely**$_{JOHN}$ will be at the party.
                                                            (Woods 2014: 212, ex.17d)

(228)   English high adverbs: seriously

    a.   **Seriously**$_{SPEAKER}$, Jessica wants to come to the party.

    b.   ?**Dima** told Nathan that, **seriously**$_{DIMA}$, Jessica wants to come to the party.
                                                            (Woods 2014: 212, ex.16a)

As illustrated by examples in (227) and (228), what is speaker-oriented at the root level, is subject-oriented when embedded.[75] Woods then proposes an analysis such that adverbs have a null proform argument that has to be bound by the closest binder, which enforces a shifted reading.

There are two kinds of shifted readings that are logically possible: ones where the attitude subject thinks they have relevant evidence and ones where the speaker ascribes having such evidence to the attitude subject. In Woods' analysis, it would be easy to force the lack of third-party assessment by pairing the local binding with the usual assumptions about 'de se' (cf. Chierchia 1989). In other versions of speech-act approaches, one needs to appeal to the nature of commitments, which define speech acts. Commitments are mental states and nobody can subscribe a third party to a commitment. However, commitments are by definition public. So, if a person is not acting according to the commitment they publicly took up, a third party can call them on it—unlike the situation with private beliefs. It seems then that discourse commitments are not subjective in the same way as e.g. expressions of pain and that incorporating subjectivity into a speech-act analysis of evidentiality would require additional machinery.

In the discussion of embedded speech acts above, I am playing the devil's advocate. As often noted in the literature, elements that unmistakably deal with communicative intentions, such as *frankly*, *seriously*, *honestly*, do resist embedding, as indicated by the question mark in (228b). High adverbs may not form a uniform class and *definitely* can be easily construed as a modal, subject to the same mechanism as described for modal auxiliaries in §5.3.1. Furthermore, I am not endorsing such a view on all evidentials. In fact, in Chapter 8 I will argue against treating Origo as a kind of PRO that has to be bound by the closest discourse participant in the structure, contra Speas and Tenny (2003); Woods (2014). But such a view is an analytical option, therefore it is not a given that illocutionary evidentials—if they exist—*have to* be speaker-oriented when embedded.

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75. Woods, together with the literature, claims that the shift is obligatory. My point is that illocutionary material does not have to be speaker-oriented under attitudes, which is enough for the dichotomy view on evidentiality to collapse.

Murray (2010)-style analysis According to a prominent line of research (Murray 2010, 2014), evidentials are akin to supplements in that they contribute discourse-new not-at-issue content and an independent, secondary assertion. In Chapter 4, I argued based on the data from dialogues that there is not enough empirical evidence to support the not-at-issue analysis of evidentials. For the sake of argument, I am going to assume now that it is a viable analytical option. Below I discuss embedding-specific predictions of an analysis of this type.

It is assumed (Koev 2016) that not-at-issue evidentials project in attitudes and therefore are speaker-oriented.[76] This assumption is based on Potts's (2005) initial intuition for supplements that projection entails speaker's perspective. In Potts' analysis supplements, even if superficially embedded, are adjoined at the root level and are anchored to the speaker. This was motivated by examples like (229a), that presumably receive an LF as in (229b):

(229)   a.   **Sheila** says that Chuck, **a confirmed psychopath**$_{SPEAKER}$, is fit to watch the kids.
                                                                            (Potts 2007a: 477, ex.3a)

        b.   LF: [Chuck is a psychopath] ∧ [Sheila says that Chuck is fit to watch the kids].

In (229a), it is clear that the appositive reflects speaker's perspective. However, supplements do not have to project or to be speaker-oriented.

First, later research on supplements (Amaral et al. 2007; Schlenker 2013), including Potts' own (Harris and Potts 2009, 2011) proved this intuition wrong. Even though supplements prefer to be anchored to the speaker, they don't have to be:

(230)   *Context: My aunt is extremely skeptical of doctors in general.*

        She says that dentists, **who are only in it for the money anyway**$_{AUNT}$, are not to be trusted at all. (Harris and Potts 2009: Appendix A, ex.3)

In (230) the non-restrictive relative clearly signals Aunt's attitude towards dentists, and not that of the speaker. What is not clear is how to account for the shifted reading. Harris and Potts argue that, because Aunt's attitude is made salient the previous discourse, this reading arises as a result of a pragmatic mechanism of perspective shift. For them, this mechanism does not affect projection.

Second, Schlenker (2013), based on data from subjunctive, Sequence of Tense and modal interpretation of tenses, has shown that supplements may scopally interact with the attitude verb (see (Brasoveanu, AnderBois, and Henderson 2015) for other examples of cross-clausal dependencies). For instance, non-restrictive relatives (231a), but not clausal parentheticals (231b), can have forward-shifted past, which denotes an event taking place after the utterance time (thus not genuine past) but prior to some future time.

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76. Recall that modal analyses postulate an evidential presupposition, which is also a type of projective content. It is not clear then why modal evidentials are always expected reflect the attitude holder's perspective.

(231) a. [After the next elections, we **will** be in a situation [in which the Republican candidate won thanks to the far-right, [with which he **struck** an alliance]]].
$\not\Rightarrow$ The Republican candidate has already struck an alliance with the far-right.

   b. [After the next elections, we **will** be in a situation [in which the Republican candidate won thanks to the far-right]] [(he **struck** an alliance with it).]
$\Rightarrow$ The Republican candidate has already struck an alliance with the far-right.

(Schlenker 2013: 10, ex.19)

(231a) has the forward-shifted interpretation such that the alliance does not yet exist at the utterance time. (231b) can only mean that such an alliance is already in place. The forward-shifted interpretation only arises when the past tense is embedded under future (232a) and is impossible otherwise (232b), which shows that the relative clause in (231a) is not adjoined at the root level:

(232) *Context: We do not know who the next Republican candidate will be. But we know other things about the political situation.*

   a. [After the next elections, we **will** be in a situation [in which the Republican candidate **won** thanks to the far-right]].

   b. [After the next elections, we **will** be in a situation [in which the Republican candidate **won** with an overwhelming majority]]. # [The far-right **supported** him].   (Schlenker 2013: 10, ex.18)

Summing up, the interpretations of embedded supplements are not limited to speaker-oriented and projected. Therefore, the analyses that postulate a parallelism between evidentials and other types of not-at-issue content (first of all Murray 2010, 2014) overgenerate and do not ensure that evidentials only receive the attested interpretations.

Specifically, there is nothing in the system to prevent third-party assessment. First, projection in attitudes—or lack thereof—amounts only to being affected by intensional quantification (assuming the Hintikkan semantics for attitude verbs). Origo is intact. Therefore, it is expected that non-projected evidentials may have a speaker-oriented interpretation. Second, if the reference of Origo is changed by a pragmatic shift of the kind proposed by Harris and Potts for supplements, it does not predict that shifted interpretation is also a non-projected one. In fact, Harris and Potts explicitly argue that shift is independent of projection.

Two additional assumptions can remedy the problems outlined above:

— attitude verbs quantify over objects richer than worlds (or world-time pairs);
— Origo is included in the object attitudes quantify over and thus is shifted.

One implementation of a more articulated relation between perspective and projection is that of Stephenson (2007b,a), already discussed in § 5.3.1. In her account, attitudes quantify over judge-centered worlds and shift anything in their scope that is judge- and world-sensitive. The correlation between perspective and projection thus can be derived if evidentials

are treated as relativized to a world and a judge, as in (233, repeated from 223):[77]

(233) $[\![\mathbf{Ev}]\!]^{c,\langle w,j\rangle,g} = 1$ iff j in w acquired p in a particular way that is lexically specified by the evidential marker (direct perception, inference, hearsay, etc)

Epistemic modal auxiliaries have to be interpreted in the scope of the attitude verb, so strictly-modal approaches to evidentiality would not allow projected readings. However, the template in (233) can serve as a general mechanism for deriving the subjectivity of evidentials. In particular, the not-at-issue analyses of evidentiality would derive the facts if evidentials are treated as judge-dependent, and a similar avenue is explored by Potts (2007b) for expressives. Importantly, the facts are not derived if perspective is not taken into account and is assumed to be a side-effect of projection.

5.3.3 Recap

This section discusses how different approaches to evidentiality fare with respect to the constraint on third-party assessment.

It has been claimed that modal evidentials scopally interact with the attitude verb and shift. I have shown that modal approaches to evidentiality do not predict it in their current form as they take the Kratzerian semantics off the shelf. A mechanism like Stephenson's (2007b; 2007a) is needed to account for the shift of modals-in-attitudes, and a similar mechanism can be adapted for evidentials.

It has been claimed that illocutionary evidentials are scopeless and therefore speaker-oriented. Frameworks that allow embedding of the speech-act material in fact predict the opposite: embedded speech acts do not reflect discourse commitments of the current speaker. Frameworks that treat evidentials on a par with supplements overgenerate. The literature on evidentiality assumes that supplements obligatorily project and are obligatorily speaker-oriented. Recent research shows that none of the premises holds: supplements may shift and also may scopally interact with the attitude verb (it is not discussed whether the two are correlated in any way). Therefore, to account for the range of interpretations of evidentials-in-attitudes, it is not enough to say that they contribute not-at-issue content. An explicit mechanism is needed that would connect (a) whose perspective is reflected, and (b) which worlds the evidential is evaluated with respect to. I show that Stephenson-style judge-dependence does just that.

Ultimately, I show that the existing theories do not handle the data. Both shifted and non-shifted evidentials alike are subject to the same constraint, which undermines the dichotomy view on evidentiality and indicates the semantic uniformity of this category. One way to capture it is judge-dependence. But that is not the only option. In the next section, I show that an analysis proposed in Chapter 4 derives the facts in a unified way.

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77. For such an analysis to work, it is important to implement it within frameworks where the judge is part of the index, such as Stephenson's. Anand and Korotkova (2016) independently argue that only such theories handle an interpretational restriction on predicates of taste and epistemic modals in attributive positions.

5.4 Proposal

To recapitulate, some of the logically possible interpretations are not attested for evidentials-in-attitudes. Evidentials ban third-party assessment and it is thus impossible to use an evidential in contexts where having acquired the scope proposition is ascribed to Origo by someone else. This ban is the underlying cause of the apparent correlation between perspective and projection: either evidentials are speaker-oriented and evaluated with respect to the actual world, or evidentials are subject-oriented and evaluated with respect to the relevant alternatives.

It has been argued that perspectival orientation is a side-effect of projection, but the approaches without a formal representation of perspective do not in fact derive the correlation. It is not impossible to preserve the idea that being in the scope of an attitude verb has an effect on perspective. For instance, it can be achieved in a system wherein (a) evidentials are judge-dependent and (b) judges and worlds are yoked together as parts of the index of evaluation.

In this section I provide an alternative analysis that does not appeal to projection. I will treat Origo as a Kaplanian indexical that is context-sensitive and world-independent, which amounts to 'projective' readings in attitudes. Below, I first lay out the assumptions about indexicality and attitude reports, and then show that the analysis proposed in Chapter 4 makes the right predictions with respect to the range of interpretations of evidentials in attitudes.

5.4.1 Background: indexicals and attitudes

Indexicals I will use Kaplan (1977/1989)'s doubly-indexed system wherein the value of indexical expressions such as *I* and *here* is determined purely by context and cannot be manipulated by linguistic operators, outside of cases of indexical shift (see Chapter 7: Appendix F) and the so-called *fake indexicals* (see below). Expressions are evaluated with respect to two parameters, *context* and *index*:

(234) $\llbracket \phi \rrbracket^{c,i}$

Context is an ordered tuple that includes information about the utterance situation, such as who is talking, to whom, where, in which world, etc:

(235) $c = \langle author, hearer, location, \ldots, world \rangle$

Indexicals, per Kaplan, are directly referential and correspond to a particular coordinate of the current context:

(236)   a. $\llbracket \text{ I } \rrbracket^{c,i,g} = \text{AUTHOR}(c)$

   b.   But $\llbracket \text{ the speaker } \rrbracket^{c,i,g} = \iota x \, [x \text{ is a speaker in WORLD}(i)]$

   c. $\llbracket \text{ you } \rrbracket^{c,i,g} = \text{HEARER}(c)$

   d.   But $\llbracket \text{ the addressee } \rrbracket^{c,i,g} = \iota x \, [x \text{ is an addressee in WORLD}(i)]$

e. $[\![\text{ here }]\!]^{c,i,g} = \text{LOCATION}(c)$

This system captures two defining properties of indexicals: their context-sensitivity and their general insensitivity to quantification (see Schlenker 2011, Schlenker forth. for an overview).

First, the value of indexicals varies from an utterance to utterance, as illustrated in (237):

(237) a. Natasha: I am a vegetarian.
           'I' = Natasha

       b. Kathleen: I am a vegetarian.
           'I' = Kathleen

Given that the value of *I* is determined by context and that the contexts in (237a) and (237b) are different, *I* has different referents in (237a) and (237b).

Second, even though there are ways to express what *I* seems to do via other linguistic means, such as *the person who is speaking*, there is an important difference between genuine indexicals and utterance-sensitive definite descriptions. Indexicals, unlike definite descriptions, cannot co-vary with a quantifier:

(238) a. Natasha: At some point, **I** was tired.
           'I' = Natasha

       b. Natasha: At some point, **the person who is speaking** was tired.
           'I' can be Natasha but does not have to be   (cf. Schlenker 2011: 1570, ex.20)

       Based on examples such as (239) below, it has been argued that personal indexicals may
       be bound:

(239) **Natasha**: Only **I** mentioned that I am a vegetarian.

       (i)   NOT BOUND: **Nobody else** mentioned that **Natasha** is a vegetarian.

       (ii)   BOUND: **Nobody else** mentioned that **they** are a vegetarian.

       Such cases are restricted and their proper analysis is a matter of a debate (Partee 1989;
       Cable 2005; Kratzer 2009; Wurmbrand 2015), with one of the options being to make in-
       dexicals assignment-dependent. However, this entire issue is orthogonal to my proposal
       regarding evidentials, so I will not return to it anymore.

Also unlike definite descriptions, indexicals are insensitive to intensional quantification:

(240) *Context : Kathleen says: "Natasha is a vegetarian".*

    a.   ✓Natasha: Kathleen says that **I** am vegetarian.

    b.   ✓Natasha: Kathleen says that **the person who is speaking** is a vegetarian.

In (240), Kathleen's utterance can be reported both by (240a) and by (240b). *I* embedded under *say* may refer to the current utterer, i.e. Natasha. The same goes for the definite description.

(241) *Context: Kathleen says: "I am a vegetarian"*

    a.   #Natasha: Kathleen says that **I** am vegetarian.

    b.   ✓Natasha: Kathleen says that **the person who is speaking** is a vegetarian.

At the same time, Kathleen's utterance in (241) can only be reported by (241b) but not by (241a): while the definite description may refer to the attitude subject, *I* cannot. In other words, *I* always refers to the current utterer of the sentence.

> Schlenker (1999) showed that in some languages indexicals may get their values from non-matrix contexts in languages other than English: in such languages, (241a) is a licit report of (241). It is possible to incorporate such facts into the theory without altering Kaplan's major intuition about context-sensitivity, and Appendix F (Chapter 7) discusses the little industry on shifted indexicality across languages and attitudes.

Attitudes   The second set of assumptions concerns the semantics for attitude predicates and is adopted from (Anand and Nevins 2004; Anand 2006).

An index will be understood an object of type k, same as context, and includes information about the circumstance of a speech act such as e.g. speaker and world. This will become important when I discuss evidential shift in Chapter 7.[78] In matrix cases, index and context are the same:

(242) $i_k = c^* = \langle author, hearer, \ldots, world \rangle$

Further, I will treat attitude predicates as quantifiers over indices, rather than (centered) worlds (as in Stephenson's (2007b; 2007a) approach discussed in §5.3.1), which is illustrated by a semantics for *think* below:[79]

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78. Anand and Nevins (2004) provide conceptual arguments from attitudes 'de se' as to why the index includes more than just time and world: obligatorily 'de se' expressions such as PRO can be analyzed as making reference to the individual coordinates, which immediately accounts for the lack of 'de re' interpretations. Another line of research also treats PRO and indexicals on a par, but argues against having any individual coordinates whatsoever. The formal mechanism is binding by an abstractor at the left periphery of the clause (see (Pearson 2013b) and references therein).

79. In a similar system in (Schlenker 2003; Sudo 2012) attitude predicates directly manipulate contexts.

(243) $[\![\text{think } \phi]\!]^{c,i,g} = \lambda x_e.\forall i'$ compatible with what x thinks at i, $[\![\phi]\!]^{c,i',g}$

This gives the following semantics for a sample sentence with *think*:

(244) a. Meaghan thinks that I am a space alien.

b. LF: [Meaghan think [I am a space alien]]

c. $[\![\text{Meaghan thinks that I am a space alien}]\!]^{c,i,g}$
$= [\![\text{thinks}]\!]^{c,i,g} (\lambda i''.[\![\text{I am a space alien}]\!]^{c,i'',g}) ([\![\text{Meaghan}]\!]^{c,i,g})$
$= 1$ iff $\forall i'$ compatible with what M. thinks at i, $[\![\text{I am a space alien}]\!]^{c,i',g}$
$= 1$ iff $\forall i'$ compatible with what M. thinks at i, AUTHOR(c^*) is a space alien at i'
$= 1$ iff $\forall i'$ compatible with what M. thinks at i, the speaker is a space alien at i'

Intensional operators such as *think* manipulate the index parameter. The context parameter, on the other hand, remains intact in the scope of attitude predicates. As a result, expressions such as *I*, which are sensitive to context, do not change their reference, as in (244). The context parameter can only be manipulated by *monsters*, to be discussed later in Chapter 7.

5.4.2 Analysis

I argue that evidentials belong to the class of *subjective* expressions whose truth cannot be evaluated externally, similarly to first-person attitude reports. Subjectivity is supplied by two components: (i) the first-person component, which I analyze as indexicality and which is a part of the conventional meaning of evidentials, and (ii) the mental state component.

Below I provide two formal implementations of the subjective analysis that differ in how they treat the mental state component. In the first one, mental states are not directly encoded in the lexical entry: specific linguistic effects arise because evidentials talk about private experiences that have the property of incorrigibility of knowledge. In the second one, evidentials are treated as first-person knowledge ascription. This way, the subjectivity of evidentials is of the same nature as that of other 'de se' attitudes, and this treatment has an advantage of being more explicit. Despite the technical differences, these implementations ultimately say the same thing.

I treat Origo as an indexical and add one more individual coordinate to the context and index:[80]

(245) c = $\langle$*author, hearer,* **origo***, location, ..., world*$\rangle$

Just like other perspective-sensitive phenomena, evidentials obey the speaker default:

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80. Both *Author* and *Origo* are needed because they are sensitive to different operators, see Chapter 7.

(246) $\text{ORIGO}(c) = \text{AUTHOR}(c)$

First, evidentials are utterance-sensitive: Origo varies from one context to another. Second, evidentials do not co-vary with quantifiers and have to always talk about the actual utterance situation. This property is illustrated by the behavior of *mIş* below:

(247)   Turkish

    a. Hearsay
        *Her kar   yag-dı   haber-ı   cık-tığ-ın-da,   kar
        every snow precipitate-PST word-ACC go.out-NFUT.NMLZ-1SG-CONV snow
        yağ-mış   ol-uyor
        precipitate-IND.PST be-PROG
        Intended: 'Whenever it is reported that it snowed, I hear that it snowed.'

    b. Inferential
        *Dışarıda her   beyaz gör-düğ-üm-de,   kar   yağ-mış
        outside   every white see-NFUT.NMLZ-1SG-CONV snow precipitate-IND.PST
        ol-uyor
        be-PROG
        Intended: 'Whenever I see white outside, I infer that it snowed.'

(247) shows that *mIş* requires the evidence to be *de nunc* and is not licensed in scenarios where the presence of relevant evidence is introduced by a quantifier.

Two versions of the formalism are represented below.

Variant I   In this variant, the subjectivity of evidentials stems from the properties of cognitive processes they describe. First-person perception and introspection are not subject to third-party assessment, which in turn constrains the linguistic behavior of elements that talk about these experiences.

(248) $[\![\text{EV}]\!]^{c,i,g} = \lambda p.\ p(i) \wedge \text{ACQUIRE}(p)(Origo_c, w_c),$
      where ACQUIRE is a stand-in for predicates that specify how Origo learned the scope proposition

Below I provide an application of this view to Georgian evidential past (the hearsay interpretation) and a derivation for root declaratives and embedding under attitudes.

(249) $[\![\text{EV.PST}_{\text{REP}}]\!]^{c,i,g} = \lambda p.p(i) \wedge \text{HEAR}(p)(Origo_c, w_c)$

(249) says that the evidential asserts its scope proposition and that the evidential origo $Origo_c$ heard the scope proposition in the world of evaluation w_c.

A derivation for a root declarative sentence (250a) is given in (250c) below:

(250) a. Georgian
Context: My friend Maria tells me about Natasha.
natasha-s **codnia** kartul-i
Natasha-DAT know.3SG.S.3SG.O.**IND:PST** Georgian-NOM
'Natasha knows Georgian, *I hear*.'

b. LF: [EV.PST$_{\text{REP}}$ [Natasha knows Georgian]

c. ⟦ (250a) ⟧^{c,i,g}
$= $ ⟦ EV.PST$_{\text{REP}}$ ⟧^{c,i,g} ($\lambda i'$. ⟦N. knows G. ⟧$^{c,i',g}$)
$= 1$ iff N. knows G. at i $\wedge$ $Origo_c$ heard in w_c that N. knows G
$= 1$iff N. knows G. at i $\wedge$ $Author_c$ heard in w_c that N. knows G

In attitude reports, this semantics derives the lack of third-party assessment. A derivation for (251a, repeated from 213), is given in (251c):

(251) a. Georgian
Context 1: I've never met Natasha, who is a friend of a friend. Said friend told me that Natasha knows Georgian.
Context 2: I've never met Natasha, who is a friend of Maria's, and generally know very little of her. Maria is sure she told me that Natasha knows Georgian.
maria pikrobs [rom natasha-s **codnia** kartul-i]
Maria think.3SG.S.PRES [COMP Natasha-DAT 3SG.S.**IND.PST** Georgian-NOM]
✓*Context 1*: 'Maria thinks that—*and I was told it*—Natasha knows Georgian'.
#*Context 2*: 'Maria thinks that *I was told that* Natasha knows Georgian'.

b. LF: [Maria thinks that [EV.PST$_{\text{REP}}$ [Natasha knows Georgian]]

c. ⟦(251a)⟧^{c,i,g}
$= $ ⟦thinks ⟧^{c,i,g} ($\lambda i'$.⟦ EV.PST$_{\text{REP}}$ ⟧$^{c,i',g}$ ($\lambda i''$. ⟦N. knows G. ⟧$^{c,i'',g}$)) (⟦Maria⟧^{c,i,g})
$= 1$ iff $\forall i'$compatible with what Maria thinks at i,
N. knows G. at i $\wedge$ $Origo_c$ heard in w_c that N. knows G
$= 1$ iff$\forall i'$compatible with what Maria thinks at i,
N. knows G. at i $\wedge$ $Author_c$ heard in w_c that N. knows G

The crucial component of this approach is rooted in the properties of information acquisition described by evidentials. In the case of hearsay, Origo is the only authority over what they think they heard, which results in the ban on third-party assessment in attitudes.

Variant II This variant treats evidentials as attitudes 'de se', and uses the the notion of subjective epistemic alternatives (cf. Stephenson 2007b: 44, ex.56):

(252) Epist$_{x,w} = \{\langle x',w' \rangle \mid$ it is compatible with what x knows in w' for x to be x' in w' $\}$

I propose that ER is a statement involving quantification over epistemic alternatives of Origo:

(253) $[\![\text{EV}]\!]^{c,i,g} = \lambda p.\ p(i)\ \wedge\ \forall \langle x', w' \rangle \in \text{EPIST}_{Origo_c, w_c} : \text{ACQUIRE}(p)(x', w'),$
where ACQUIRE is a stand-in for predicates that specify how Origo learned the scope proposition

(254) is the lexical entry for the reportative use of Georgian evidential past:

(254) $[\![\text{EV.PST}_{\text{REP}}]\!]^{c,i,g} = \lambda p.p(i)\ \wedge\ \forall \langle x', w' \rangle \in \text{EPIST}_{Origo_c, w_c} : \text{HEAR}(p)(x', w')$

(254) says that the evidential asserts (a) its scope proposition and (b) that in all world-individual pairs compatible with what the evidential origo $Origo_c$ knows in the world of evaluation w_c, individual x' that Origo identifies as oneself in w' heard p. Roughly, when a speaker makes an evidential statement, they are asserting the scope proposition and that, for all they know, they acquired this proposition in the relevant way.

One may argue that the "for all Origo knows" component is a norm of assertion regardless of evidentiality; see Williamson (2000) on the knowledge norm of assertion, and discussion and further references in (Pagin 2015). If so, it then shouldn't be incorporated into the semantics of evidentials. The difference between norms of assertion and conventional meaning becomes clear in embedded cases: while norms of assertions evaporate, conventional meaning doesn't. Embedding thus allows to draw a line between semantics and pragmatics, cf. e.g. the contrast in the behavior of epistemic contradictions and Moore-paradoxical sentences noted by Yalcin (2007) (see footnote 26 in Chapter 2).

(255c) is a derivation for a root sentence (255a, repeated from 250a) wherein Georgian evidential past is interpreted as hearsay:

(255) a. Georgian
           Context: My friend Maria tells me about Natasha.
           natasha-s   **codnia**   kartul-i
           Natasha-DAT know.3SG.S.3SG.O.**IND:PST** Georgian-NOM
           'Natasha speaks Georgian, *I hear*.'

       b. LF: [EV.PST$_{\text{REP}}$ [Natasha knows Georgian]]

       c. $[\![$ (255a) $]\!]^{c,i,g}$
           $= [\![$ EV.PST$_{\text{REP}}$ $]\!]^{c,i,g}$ ($\lambda i'.\ [\![$N. knows G. $]\!]^{c,i',g}$)
           $= 1$ iff N. knows G. at i
                $\wedge \forall \langle x', w' \rangle$ compatible with what $Origo_c$ knows in w_c,
                x' heard in w' that N. knows G.
           $= 1$ iff N. knows G. at i
                $\wedge \forall \langle x', w' \rangle$ compatible with what $Author_c$ knows in w_c,
                x' heard in w' that N. knows G.

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(256c) is a derivation for (256a/251a, repeated from 213):

(256) a. Georgian
Context 1: I've never met Natasha, who is a friend of a friend. Said friend told me that Natasha knows Georgian.
Context 2: I've never met Natasha, who is a friend of Maria's, and generally know very little of her. Maria is sure she told me that Natasha knows Georgian.

maria	pikrobs	[rom	natasha-s	**codnia**	kartul-i	]
Maria	think.3SG.S.PRES	[COMP	Natasha-DAT	3SG.S.**IND.PST**	Georgian-NOM	]

✓*Context 1*: 'Maria thinks that—*and I was told it*—Natasha knows Georgian'.
#*Context 2*: 'Maria thinks that *I was told that* Natasha knows Georgian'.

b. LF: [Maria thinks that [EV.PST$_{\text{REP}}$ [Natasha knows Georgian]]

c. $[\![(256a)]\!]^{c,i,g}$
$= [\![\text{thinks }]\!]^{c,i,g}$ ($\lambda i'.[\![$ EV.PST$_{\text{REP}}$ $]\!]^{c,i',g}$ ($\lambda i''.$ $[\![$N. knows G. $]\!]^{c,i'',g}$)) ($[\![\text{Maria}]\!]^{c,i,g}$)
$= 1$ iff $\forall i'$ compatible with what Maria thinks at i,
  N. knows G. at i'
    $\wedge \forall \langle x', w' \rangle$ compatible with what $Origo_c$ knows in w_c,
    x' heard in w' that N. knows G.
$= 1$ iff $\forall i'$ compatible with what Maria thinks at i,
  N. knows G. at i'
    $\wedge \forall \langle x', w' \rangle$ compatible with what $Author_c$ knows in w_c,
    x' heard in w' that N. knows G.

Evidentials are felicitous just in case Origo knows of oneself that they have a particular information source for *p*, therefore, evidentials-in-attitudes cannot be used in scenarios when having information source for *p* is ascribed to Origo by a third party, which correctly predicts the lack of third-party assessment in (256a).

Examples like (256a) demonstrate why "for all origo knows" is part of the semantics of evidentials rather than some pragmatic calculation coming with assertions. If it were due to pragmatics, it should be possible for a third party to ascribe evidence to Origo, yet this situation is not attested. One way to account for it is by incorporating the attitudinal part into the conventional meaning of evidentials. Another way, implemented in Variant I, is to appeal to the non-linguistic pragmatics.

5.5 Awareness

This section shows that evidentials are subject to an awareness condition: statements with evidentials are only felicitous if made consciously about oneself. This property is a hallmark of obligatory 'de se' pronouns and is usually viewed as an arbitrary fact of grammar, which starting with (Chierchia 1989) has been used an argument in favor of dedicated 'de se' LFs; see (Anand 2006) and, more recently, (Pearson 2015a) for an overview. I offer a novel route to 'de se' and argue that for evidentials, as well as for other subjective expressions, awareness

is not arbitrary and is an integral component of subjectivity.

The examples below show that Turkish *mIş* , both in its hearsay (257) and inferential (258) guise, cannot be used to attribute evidence to an individual that Origo does not recognize as being oneself. Similar data hold for other languages where evidentials can be shifted, such as German, Japanese and Bulgarian.

(257)   Turkish: hearsay scenario
        Context: Alexis and I are watching a muted video of a team of people in an escape room. After talking to a team member, one person suddenly rushes to a far left corner. Alexis thinks that that person was told that a clue is in that corner, and says so to me. What she doesn't realize is that this person is herself.
        #Alexis [ipucu sol köşe-dey-miş   ] de-di.
        Alexis   [clue   left corner-LOC-IND.PST] say1-PST
        Intended: 'Alexis said that she was told that the clue was in the left corner.'

In (257), even though Alexis thinks that the team member whom she doesn't recognize as herself has hearsay evidence for the scope proposition, she cannot use *mIş* to attribute this evidence to her. At the same, while watching the video, she does not have access to the content of the verbal exchange between team members, and therefore cannot use *mIş*to indicate her own hearsay evidence.

(258)   Turkish: inferential scenario
        Context: Alexis and I have designed a new escape room and are testing it with a bunch of people. We are watching a fragment where one person suddenly rushes to a far left corner. Alexis thinks that that person must have inferred that a clue is in that corner, and says so to me. We know the plot and that the clue is not there. Alexis forgot she played it herself once as a tester, and does not realize that the person she is talking about is herself.
        #Alexis [ipucu sol köşe-dey-miş   ] de-di.
        Alexis   [clue   left corner-LOC-IND.PST] say1-PST
        Intended: 'Alexis said that she inferred that the clue was in the left corner.'

Likewise in (258), even though Alexis thinks that the team member inferred something about the clue's location, she cannot use *mIş* to indicate that this individual, whom she doesn't recognize as herself, has this type of evidence. And because Alexis knows the actual location, *mIş* cannot be used to reflect her evidence either, which leads to infelicity of the sentence in a given context.

The awareness constraint (the term due to Kuno (1987) on picture pronouns) is a defining property of attitudes 'de se'. Such attitudes play an important role in the philosophy of language and mind (Lewis 1979; Perry 13), and have been recognized as linguistically relevant with the discovery of natural language elements that obligatory talk about self (Morgan 1970; Chierchia 1989). English PRO, together with its counterparts in e.g. Italian and French, belongs to this class.

(259)   *Context: Winnie the Pooh and Piglet are going to hunt a certain animal called a Woozle. The adventure begins when they find footprints in the woods that they think must have been made by one of these creatures, and decide to see where the tracks lead. Unbeknownst to them, however, they have been walking in circles: the footprints are Pooh's own, while the smaller tracks that they thought were made by a Wizzle are in fact the marks of Piglet's little feet.*

Pooh tells Piglet that the tracks have been made by a Woozle, with something like 'He is a Woozle':

a.   Pooh$_i$ claimed that **he**$_i$ was a Woozle.

b.   # Pooh$_i$ claimed **PRO**$_i$ to be a Woozle.
       (adapted from Pearson 2013b: 559-560, based on A. Milne's "Winnie the Pooh")

(259a) can be paraphrased as something like 'Pooh claimed of someone that he was a Woozle. Unbeknownst to Pooh, this someone is himself', and is felicitous in the scenario above. On the other hand, the content of Pooh's speech cannot be described with (259b). The contrast between (259b) and (259a) highlights that English PRO requires an awareness on part of the attitude holder that it is the attitude holder, and nobody else, who is the referent of PRO. In other words, PRO has to be construed 'de se'. Pronouns such as *he*, on the other hand, do not have such restrictions and can be construed 'de se' or 'de re'.

Later other types of pronouns have been claimed to be obligatorily 'de se', such as certain logophors, e.g. in Yoruba (Anand 2006);[81]; shifted indexicals (Schlenker 1999, 2003; Anand 2006); and long-distance reflexives in e.g. Korean, illustrated in (260) below:

(260)   Korean *caki*
✓DE SE *Context 1: John says: "That thief stole my purse!"*
DE RE *Context 2: John says: "That thief stole that purse!" (not aware that it was his purse)*

John-i   [somaychiki-ka   caki-uy   cikap-ul   hwumchy-ess-tako] malhay-ss-ta
John-NOM [pickpocket-NOM caki-GEN purse-ACC steal-PST-COMP   ] say-PST-DECL
'John said that the pickpocket stole his own purse.'   (Park 2015: 21: ex.61)

(260) shows that *caki* is incompatible with the scenario wherein John does not recognize the purse as his own, which means that the referent of *caki* has to be construed 'de se'.

Linguistic theories of 'de se' can be grouped into two families: (A) 'de se' as a sub-case of 'de re' ascription via a special kind of acquaintance relation (Lewis 1979; Maier 2010, 2011); and (B) 'de se' derived via dedicated means, such as binding by an operator (Chierchia 1989; Percus and Sauerland 2003a,b), or context shifting (Schlenker 1999, 2003; Anand and Nevins 2004; Anand 2006). The first type of approach is needed at least for pronouns such as *he* that allow both construals. The second type of approach has been motivated in the first place

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81. As Pearson (2015b) shows with data from Ewe, the obligatory 'de se' construal is not a universal property of logophoric pronouns.

by the existence of obligatorily 'de se' elements, though see (Maier 2011; Landau 2015) for alternative solutions. What these approaches share is that the difference between PRO and *he* does not follow from independently required constraints, and thus has to be reflected in the semantics.[82].

I am not going to take sides in the debate on the proper treatment of 'de se' pronouns; see (Anand 2006), (Pearson 2015a) and references therein. My goal here is to account for the behavior of evidentials. As I have shown, Origo has to be construed 'de se'. None of the current theories of evidentiality mentions or derives this fact. As I will discuss below, modal theories may be able to account for the data because epistemic modals are 'de se'. Illocutionary theories, on the other hand, would require ancillary assumptions to generate the obligatory self-ascription.

The second version of formal semantics that I propose for evidentials takes a conventional path. It treats evidentials as attitudes 'de se', which quantify over Origo-centered worlds, and thus makes the obligatory 'de se' construal a part of the conventional meaning of evidentials. The generalized lexical entry is repeated below:

(261) $[\![\text{EV}]\!]^{c,i,g} = \lambda p.\, p(i) \wedge \forall \langle x', w' \rangle \in \text{EPIST}_{Origo_c, w_c} : \text{ACQUIRE}(p)(x', w')$,
 where ACQUIRE is a stand-in for predicates that specify how Origo learned the scope proposition

As I said in the beginning of the dissertation, the proposal in (261) is more heavy-handed. It has the advantage of being visually-explicit, but comes short at explaining why evidentials are 'de se'. I argue that the first version of my proposal explains it by appealing to subjectivity of cognitive processes described by evidentials. The generalized lexical entry is repeated below:

(262) $[\![\text{EV}]\!]^{c,i,g} = \lambda p.\, p(i) \wedge \text{ACQUIRE}(p)(Origo_c, w_c)$,
 where ACQUIRE is a stand-in for predicates that specify how Origo learned the scope proposition

(262) does not make reference to mechanisms that are typically used to derive 'de se'. I propose that such a mechanism exists, but does not have to be encoded in their semantics.

As I have argued throughout Part II of the dissertation, evidentials, along with other subjective expressions, resist third-party assessment due to the incorrigibility of self-knowledge obtained via the channels they describe. In dialogues (Chapter 4), this property manifests itself in that the ER cannot be targeted by denials. This behavior is similar to that of e.g. first-person attitude ascriptions, statements with psych verbs and pain reports. It is only up to the experiencer to know what they feel, therefore it is an infelicitous discourse move for a person with a lower epistemic authority to contest someone's having a particular experience. Such a move is not impossible, which I argue to be a case of performance disagreement (§ 4.5): a situation when the premises for a speech act are challenged, which is not the same as ordinary disagreement about whether or not something holds.

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82. Patel-Grosz (2015) points out that in languages with pronouns of different strength (null vs. overt, clitic vs. full pronoun), it is the weaker ones that prefer to be interpreted 'de se'

In attitude reports (this chapter), subjectivity manifests itself in that Origo cannot ascribe having evidence to a third-party. Because attitude reports make two perspectives available, that of the speaker and that of the attitude subject, this type of environment is a litmus test for subjectivity. I have shown that statements with evidentials are obligatorily first-person and always refer to Self, be it the speaker or the attitude subject. Subjective expressions whose experiencer is covert, such as taste predicates and epistemic modals, behave similarly.[83] As to subjective expressions with an overt experiencer (*I am hungry*), their behavior in embedded environments is dictated by the range of interpretations of noun phrases.

I argue that the amnesiac scenarios as in (257) and (258), typically used to diagnose 'de se', instantiate a subspecies of third-party assessment. Alexis attempts to use an evidential to put words in the mouth of the character who happens to be herself, unbeknownst to her (but not unbeknownst to the speaker). The judgments about infelicity of evidentials in such scenarios are no different if the character in the video is not Alexis, but an actual third party. It is equally impossible to attribute evidence to someone else, ample argumentation for which is provided throughout the chapter. A desideratum for linguistic theory of evidentials and other similar expressions is then to derive 'de se' as parasitic on subjectivity, and not as an independent, and often arbitrary, property. This is the purpose of the first version of the proposal I advocate, and this is something that other theories of evidentiality do not talk about.

(263) shows that the knower of epistemic modals has to be read *de se*:

(263) *Context: Sam is a spokesperson for NASA who is frustrated at what he sees as a lack of scientific understanding among the general public and, especially, the media. He decides to vent his frustration by announcing false discoveries to journalists in some of his frequent television interviews. He starts small by saying that a black hole has been found 100 light years away, then saying that a new satellite is forming around Mars. Then, on a particularly prominent talk show, he announces that there is evidence of water on the moon. This creates a media frenzy, his supervisors catch on to what he is doing, and first thing the next morning he is fired. In despair and determined to forget his stupidity, he goes home and drowns his sorrows in alcohol. He gets so drunk that when he switches on the T.V. and happens to see a clip of his own interview announcing the possibility of water on the moon, he doesn't recognize the man as himself. He thinks to himself, "Wow, that idiot thinks there might be water on the moon. People sure are stupid about science".*

       #Sam thinks there might be water on the moon.

                                                        (Stephenson 2007b: 130, ex.11)

Stephenson's (2007a) theory of subjective meaning based on the behavior of predicates of taste and epistemic modals does derive 'de se' as a consequence of the system. However, Stephenson does not talk about the properties of experiences described by the elements in question, and

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83. As discussed in detail in Chapter 6, the behavior of epistemic modals and taste predicates is more complex. In particular, EMs allow 'objective' readings (Anand and Hacquard 2009). And taste predicates can have an exocentric perspective (Lasersohn 2005; Stephenson 2007a), subsumed by Pearson (2013a) under generic readings.

'de se' results from judge-dependence. The account I propose is thus more explanatory in a theory-neutral way.

5.6   General discussion

Understanding what happens in attitude reports has often been key to the semantics of many phenomena, e.g. pronouns (Anand 2006), tenses (Abusch 1997; Ogihara and Sharvit 2012), modals (Stephenson 2007a; Hacquard 2010), as well as to parallels across those domains (Schlenker 1999). Offering the first systematic examination of evidentials-in-attitudes across languages, the chapter makes a case for evidentials.

The literature regards the interpretations of evidentials-in-attitudes as confirming the dichotomy view. One of the goals of this dissertation is to show that there is no adequate factual support for this view. In this chapter, the case in point is the lack of third-party assessment in attitudes.

The main empirical contribution is as follows: evidentials-in-attitudes are subject to an interpretational constraint so that only self-ascribed readings are allowed. Although it is logically possible to have a reading such that the attitude subject ascribes having certain kind of evidence to the speaker, and vice versa, such readings are universally banned. This is summarized below in Table 5.2 (a modified version of 5.1):

Table 5.2: Interpretations of evidentials-in-attitudes

	Origo thinks they have evidence	Someone else thinks Origo has evidence
Non-shifted	✓	☹
Shifted	✓	☹

This behavior characterizes both shifted and non-shifted evidentials—a fact surprising under the view that they constitute two distinct semantic classes. Furthermore, modelling this behavior within either modal or illocutionary theories makes said theories all the more similar.

The main theoretical contributions are twofold: I dissect previous approaches and show why they don't work without additional machinery, and provide an articulated analysis that captures the data both from attitudes and dialogues.

It has been argued that shifted readings result from the evidential being in the scope of an attitude verb, while non-shifted readings are due to projection. I show that without a formal representation of perspective (however construed), a four-way ambiguity is predicted as there is nothing to ban third-party assessment. One way to avoid the overgeneration is by assuming a mechanism similar to Stephenson's (2007a). In that system, at least some perspectival expressions are relativized to a judge, which is shifted (or not shifted) together with the world of evaluation. Such an approach would correctly generate the two attested interpretations. How-

ever, Stephenson's system is geared towards epistemics and predicates of taste, which always shift in the main predicate position. Given that, it would be left unexplained how to arrive at projected readings without maintaining the modal-illocutionary dichotomy. And maintaining it would be an undesirable outcome as it does not in fact derive the variation.

I argue that the cross-linguistic behavior of evidentials-in-attitudes provides another argument for the subjectivity of evidentials. Because it is infelicitous to externally assess a person's private experience, evidentials only allow readings in attitudes such that Origo is consciously aware of the type of evidence they have. The specific formalization I opt for treats Origo as an indexical. This treatment makes sentences with evidentials into obligatory *I*-statements. Indexicals (unless shifted) have to refer to the context of utterance and are thus not affected by intensional quantifiers such as attitude predicates. I argue that this, rather than projection, is at play with speaker-oriented readings. In Chapter 7, I provide a mechanism for evidential shift that treats it as a variety of indexical shift.

This approach has several advantages. First, dichotomy theories obscure the fact that both shifted and non-shifted readings are subject to the same constraint. My analysis, on the other hand, does not postulate arbitrary semantic differences between the two. Second, previous approaches treat non-shifted readings as projected, which is problematic because, as I have shown in Chapter 3, embedded evidentials instantiate genuine syntactic embedding regardless of their interpretation. Finally, and this is the crucial point, this analysis does double duty as it links the previously not discussed data on attitudes to the well-known pattern in dialogues.

I argue that the constraints on evidentials in these two environments are two sides of one coin. Previous approaches do not connect the lack of some interpretations in embedded clauses and the non-challengeability in matrix cases. The approach I advocate derives both properties from the same source, subjectivity. As discussed in Chapter 4, the non-challengeability of evidentials has been previously attributed to the not-at-issue status of the ER, per assumption that only the not-at-issue information is non-challengeable. I have demonstrated that it is not so: subjective at-issue content is also non-challengeable. Evidentials pattern with subjective content in that they resist all kinds of denial, unlike the NAI content that may be targeted using certain strategies such as *You are mistaken*. This chapter provides independent empirical support for such an approach: subjectivity explains the ban on third-party assessment and also accounts for the obligatory 'de se' construal.

If language is in some ways a window on the mind, evidentiality is a natural meeting point for several areas, including at least linguistics, philosophy of language, philosophy of mind, and epistemology. But so far, expressions of evidentiality have been studied in-depth almost exclusively within formal semantics. Current linguistic theories of evidentiality are disconnected from theories of knowledge and models of reasoning. By deriving the linguistic behavior of evidentials from non-linguistic properties of experiences they describe, this chapter and Chapter 4 make a necessary first step towards filling this gap.

Appendix E: Information source

In Chapters 4 and 5 I have argued that the nature of the process of information acquisition restricts the linguistic behavior of evidentials. Therefore, a better understanding of the concept 'information source' the potential of connecting the semantic research on evidentiality to other fields.

As already mentioned in § 1.1, the literature (with few exceptions) treats different information sources, such as 'direct' or 'hearsay', as semantic primitives. Below I highlight that that view is problematic since different languages cross-cut the option space differently and then suggest an avenue of meaningfully decomposing 'information source'.

The table below, repeated from § 1.1, presents the taxonomy of information sources that are grammaticalized by evidential markers:

Table 5.3: Information sources worldwide

DIRECT	INDIRECT	
	INFERENCE	HEARSAY
• visual	• reasoning	• secondhand
• auditory	• results	• thirdhand
• other sensory		• folklore

(from Willett 1988)

As evidenced by the table, languages are often sensitive to the broad distinction between direct vs. indirect. Yet the nature of this distinction is elusive, and so is the extent to which perception plays a role. One illustration comes from the ways languages encode observable results. A priori, it is not clear whether evidence from results counts as direct or as indirect, and languages in fact categorize this type of information source in different ways. Below I describe the contrast between Bulgarian and Tibetan.

In Bulgarian, as well as in many other languages (e.g. Georgian and Turkish), 'evidence from results' patterns with other sources on the indirect spectrum. One morpheme is used both for hearsay and various kinds of inference, including inference from results (264a). The morpheme, however, is incompatible with the speaker having immediate perceptual evidence and is infelicitous in a scenario where the speaker actually observed the vase breaking, even partially, as in a slow-motion video (264b):

(264)   Bulgarian indirect

    a. Observable results
        Context: The speaker sees pieces of a vase but did not see it break.
        sčupi-l-a   se
        break-**IND.PST**-F REFL
        'It broke, *I infer*.'

    b. Fragment of a slow-motion video
        Context: The speaker sees a slow-motion video where cracks start appearing on a vase.
        sčupi   se
        break.PST REFL
        'It broke.'

In Tibetan, on the other hand, the same marker covers both observable results (265a) and fragments of a slow-motion video (265b) scenarios:

(265)   Tibetan *shag*

    a. Observable results
        Context: The speaker sees the pieces but did not see it break.
        chags **shag**
        broke **SHAG**
        'It broke'.   (Kalsang et al. 2013: 530, ex.15b)

    b. Fragment of a slow-motion video
        Context: Speaker watched part of a slow motion video in which a vase was very slowly breaking. She missed the beginning and saw only the part where cracks were beginning to form in the vase.
        chags **shag**
        broke **shag**
        'It broke'.   (Kalsang et al. 2013: 531-32, ex.18c)

Shag is typically labelled as 'direct': it cannot be used if the speaker did not witness the situation in question. Kalsang, Garfield, Speas, and de Villiers (2013) argue that *shag* indicates that the speaker observes the result, or another fraction, of a telic event. In Bulgarian, as well in Georgian and Turkish, indirect evidentials do not require the results on which inference is based to be an inherent part of the event. Thus the difference in encoding inference underscores how blurry the line between "direct" and "indirect" is.

And even within the realm of direct evidentials, things are not as clear-cut as the labels suggest. The case in point is the contrast between Tibetan direct evidentials and Cuzco Quechua *=mi*. In Tibetan, all direct evidentials, including *shag*, require that the speaker be in some kind of sensory contact with the situation in question, e.g. seen it, heard it, or smelled it (Garrett

2001; Kalsang et al. 2013).[84]

In Cuzco Quechua, *=mi* may encode immediate visual perception, but its overall range of interpretations is wider, as examples in (266) below illustrate. According to Faller (2002), *=mi* signals that the speaker has *best possible grounds* for the scope proposition.[85]

(266)   Cuzco Quechua: What *=mi* does

a.   *Information acquired from an expert or an encyclopedia*
Africa-pi=**n**   elefante-kuna-qa ka-n
Africa-LOC-**BPG** elephant-PL-TOP   be-3
'In Africa, there are elephants.'   (Faller 2002: 133, ex.100b)

b.   *Faith*
Dius kan=**mi**.
God   be-**BPG**
'God exists.'   (Faller 2002: 132, ex.99)

c.   *Report*
Context: Inés told speaker that she will go to Cuzco tomorrow.
Paqarin   Inés-qa   Qusqu-ta=**n**   ri-nqa.
tomorrow Inés-TOP Cuzco-ACC-**BPG** go-3FUT
'Inés will go to Cuzco tomorrow, *I'm sure*.'   (Faller 2002: 127, ex.95)

In (266a), *=mi* is used when the scope proposition was obtained from an authority. Similarly, *=mi* can be used to add more weight to a piece of information in a teacher-student interaction, even though it was acquired via hearsay by the teacher themselves (Faller 2002: 41). In (266b), *=mi* describes a situation for which, by definition, there could not be any perceptual evidence. This is in contrast with e.g. Cheyenne where the inferential evidential is used throughout the Bible (Sarah Murray, p.c.). (266c) is a report about the future, a situation where, again, Inés is the best source about her future actions.

The bottom line is that there is no straightforward mapping of cognitive processes, such as perception, onto linguistic categories, such as direct evidentiality. It is a then up to semantic theory to decompose the information source.

The solutions offered in the literature rely on the idea that evidentials have to do with *evidence*. McCready (2011) construes evidence as a subjective increase in probability. Speas (2004, 2010); Kalsang et al. (2013) analyze different evidence types as inclusion and accessibility relations between situations. Evidence in philosophy is understood as justification for knowledge or belief; see Steup (2014) and references therein. That is, P is evidence for Q only iff the attitude holder is in a position to think that P tells us something about the likelihood of Q. The behavior of hearsay evidentials across languages indicates that evidentials as a class are not just about evidence. It is very common to use hearsay markers to merely indicate that

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84. Garrett (2001) and Kalsang et al. (2013) also discuss a special kind of direct evidentials that signal internal knowledge, but these can be subsumed under *egophoric* expressions; see Wechsler (forth.) and Chapter 8.
85. A similar situation is attested in Cheyenne (Murray 2010).

a report about Q was made; this property has been discussed in detail in § 2.4.2. In such cases, the attitude holder may be agnostic about the truth of the scope proposition or know the scope proposition to be false. McCready's and Speas & colleagues' analyses are at odds with this pattern.

An alternative avenue is to connect *Information Source*, as relevant for evidentials, and *Acquaintance Relation*, as relevant for attitude reports. In a nutshell, an acquaintance relation is a two-place relation between an attitude holder and an object of attitude. This relation says how the attitude holder conceptualizes said object. For instance, Ralph could have seen a certain man in a brown hat several times under questionable circumstances. This man is Ortcutt, and this is how Ralph is acquainted to Ortcutt, even though he might not know his name. Importantly, Ralph may have also met Ortcutt in a different situation and so may conceptualize him as a pillar of the community. So it is not enough to say that Ralph has been in some contact with Ortcutt, but it is necessary to distinguish between contacts of different nature. This is what an acquaintance relation is doing. This relation is often invoked to solve various puzzles on the interpretation of DPs in attitude reports (see Quine 1956; Kaplan 1968; Lewis 1979; Aloni 2001; Percus and Sauerland 2003a).

To be acquainted with something, one needs to somehow encounter this something, but what exactly counts as *encounter* is not clear. This is a putative point of convergence with evidentiality, which may turn out to explicitly signal precisely (supersets of) acquaintance relations. It is possible to construe evidentials as lexically encoding a particular type of acquaintance between an individual and a situation described by the scope proposition. Then, for instance, inferential evidentials would signal that an individual is acquainted with the described situation via observing its results. Direct evidentials of the Tibetan type may be described as encoding only those acquaintance relations that involve perception of the situation and require visual, auditory or other sensory contact with it. Direct evidentials of the Cuzco Quechua type may be described as encoding all of the above, plus acquaintance via a trustworthy source.

Such treatment of evidentials would be very much in line with Moulton's (2009) treatment of perception verbs such as *see* as lexically expressing certain acquaintance relations between an individual and a situation described by an infinitival complement clause, as in *Jane saw Fred to be playing violin*. Admittedly, both Information Source and Acquaintance Relation are used more like placeholders in the respective literature, and more research is needed to determine the relation between the two, if any.

CHAPTER 6

Assessment-insensitivity

Abstract: This chapter highlights a difference between evidentials on the one hand and a special class of subjective expressions on the other: epistemic modals and predicates of personal taste. As can be seen in scenarios involving disagreement with, and retraction of, modal or taste claims, the relevant knower or taster does not have to be the speaker. Furthermore, there is no straightforward procedure that would identify this individual. This special type of context-sensitivity, often called judge-dependence, is notoriously hard to analyze. I show that evidentials do not exhibit such judge-dependence and that evidential claims are always about the speaker in unembedded declarative sentences. The new kind of data I introduce provides a much needed empirical argument in the debate on the status of evidentiality in relation to epistemic modality as a semantic category. These data are correctly predicted by the proposal I advocate, but in and of itself the pattern is not an argument for a particular analysis. The chapter is thus programmatic: its purpose is to raise a problem, rather than to settle on a solution.

6.1   Introduction

Subjective expressions do not form a homogeneous class. In this chapter, I focus on a special type of them: epistemic modals (EMs) and predicates of personal taste (PPTs). These expressions are characterized by *judge-dependence* (the term *judge* is from (Lasersohn 2005) and is used descriptively here).[86]

   While there is a always a knower and a taster, respectively, the sentence does not explicitly specify who that individual is. As (267) shows for epistemics, even in root declarative clauses EMs and PPTs do not have to be anchored to the speaker:

(267)   *Holmes and Watson are using a primitive bug to listen in on Moriarty's discussions with his underlings as he struggles to avoid Holmes's plan to trap him. Moriarty says to his assistant:*

   Holmes **might** have gone to Paris to search for me.

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86. This property is also referred to as *assessment-insensitivity* (MacFarlane 2014).

Holmes and Watson are sitting in Baker Street listening to this. Watson, rather inexplicably, says 'That's right' on hearing Moriarty uttering (267). Holmes is quite perplexed. Surely Watson knows that he is sitting right here, in Baker Street, which is definitely not in Paris.

<div align="right">(Egan et al. 2005: 144-145, ex.24)</div>

In examples like (267) above the puzzle is that of agreement. Given what Watson himself knows, he is not in Paris. However, by agreeing with Moriarty's statement, Watson admits that the possibility of *p* is open, while also being privy to the actual state of affairs that excludes *p*. The sentence shows that the speaker's exclusive knowledge does not always play a role in licensing epistemic modals: the *judge* does not have to be the speaker.

It should be noted that the epistemic data are convoluted, and actual speakers disagree about judgments even in English (Knobe and Yalcin 2014). Testing eavesdropping scenarios with linguistically untrained consultants in the field would require additional care.

Data as in (267) fuel the debate mostly within philosophy of language on the proper analysis of epistemic modals, see (von Fintel and Gillies 2008b; Weatherson and Egan 2011; MacFarlane 2014) for an overview. Below is the gist of the three competing families (the views outlined are not only about epistemic modality, and *might* below is just an example):

Contextualism Statements with *might* are evaluated with respect to the context of utterance, which specifies the group whose body of knowledge the epistemic is tracking (that epistemics can be relativized to a group of people has been known at least since (Hacking 1967)). One way to accommodate (dis)agreement is to include the (dis)agreer part in the relevant group (Kratzer 1981, 1991, 2012; von Fintel and Gillies 2008a, 2010, 2011; Yanovich 2013b).

Relativism Statements with *might* are evaluated not only with respect to the context of utterance, but also with respect to the context of assessment, which includes the (dis)agreer and differs from the context of utterance in e.g. eavesdropping scenarios as in (267) (Egan et al. 2005; Stephenson 2007a,b; MacFarlane 2011, 2014).

Expressivism Statements with *might* are all about expressing uncertainty whether *p*. The (dis)agreer is concerned not with the truth values, but rather with sharing or not sharing an attitude to said uncertainty (Yalcin 2007, 2011; Swanson 2011).[87,88]

In Chapter 2, I have shown that the current debate on the relationship between epistemic modality and evidentiality does not offer formally-explicit tools that would uniquely identify epistemic modals. Part of the problem is that the literature on evidentiality focuses on the

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87. A terminological remark: Yalcin (2007, 2011) calls his approach *nonfactualism*, while referring both to contextualism and relativism as *descriptivism*.

88. Note, by the way, that Faller's treatment of evidentials is not that different from expressivism. She argues that evidentials are not propositional operators and treats the ER as a mental state that accompanies a speech act. Expressivists argue that modals are not propositional operators and often treat speech acts in general, with modals and otherwise, as expressing attitudes.

properties of English modal auxiliaries *must* and *might,* and does not discuss what characterizes epistemic modality as a semantic category.

Capitalizing on the observations from philosophy of language and without committing to a particular analysis of EMs and PPTs, I propose that judge-dependence can be used as a benchmark for evidentials, as it is a universal property exhibited across the board by expressions of epistemic modality regardless of their syntactic make-up: auxiliaries, adjectives (*possible*) and adverbials (*possibly*) alike.

At first glance, evidentials resemble EMs and bare uses of PPTs (ones without prepositional phrases introduced by *to/for*) in that Origo is not made explicit by the sentence. This differentiates evidentials, as well as EMs and PPTs, from e.g. attitude reports, whose experiencer is denoted by the subject DP.

Theories that advocate an all-modal analysis of evidentiality (first of all Matthewson 2012), or at least a modal treatment of evidentials in individual languages, predict that evidentials would also exhibit judge-dependence. This chapter shows that this prediction is not borne out.

Specifically, I focus on two phenomena, faultless disagreement and retractions. These conversational phenomena demarcate the boundary between different types of subjective expressions (cf. also Moltmann's (2012) distinction between two types of first-person content). They show that EMs and PPTs are not easily amenable to a strictly indexical analysis wherein the knower and the taster always refer to the speaker in root declarative clauses. These patterns are often used to motivate truth and content relativism, and the existence of judges at some level of semantic representation. My goal here is not to defend or refute relativism, but to show that evidentials do not give rise to faultless disagreement or to retractions.

Recent research on *must* shows that it has an evidential component (von Fintel and Gillies 2010; Lassiter 2016). I don't discuss it in this chapter, but a direct comparison between evidentials and epistemic modals in the same language would provide a better way to

The lack of judge-dependence can be accounted for within a range of theories, and the analysis I advocate throughout the dissertation is one of such theories. It treats Origo as a Kaplanian indexical, whose value is determined by the context of utterance. Therefore, it is impossible for an evidential to be anchored to some other individual than the speaker (unless shifted; see Part III). However, it is not the only analytical option that would correctly predict the pattern. Instead of promoting one theory, my goal here is to formulate a novel constraint on theories of evidentiality and to offer the first semantic diagnostic that would show whether evidentiality and epistemic modality should be equated. In particular, one should look at the behavior of the evidential component of epistemic modals, recently discussed for English *must* von Fintel and Gillies (2010); Lassiter (2016). It should be noted that the epistemic data are convoluted, and actual speakers disagree about judgments even in English (Knobe and Yalcin 2014). Testing eavesdropping scenarios similar to (267) with linguistically untrained consultants in the field would require additional care.

The chapter is structured as follows. § 6.2 discusses faultless disagreement. § 6.3 is on retractions. § 6.4 concludes.

6.2 Faultless disagreement

Ever since (Kölbel 2003), dialogues as in (268, repeated from 16) have been playing a crucial role in analyzing the behavior of predicates of personal taste:

(268)   A.   Candied grasshoppers are delicious.

       B.   No, they are gross.

(i) $\neq$ [They are gross to you]
(ii) $=$ [They are gross to me / to people in general]

The first interpretation of B's reply is only possible in cases of assumed insincerity or incompetence, discussed in detail in §4.5 under the name *performance disagreement*. Otherwise, it is an odd discourse move, whose infelicity is due to subjectivity, as I have argued extensively in Chapter 4 and as has been noted in the respective literature (Stephenson 2007b; Anand 2009).

It is the second interpretation of (268) that I am concerned with here. Such cases are referred to as *faultless disagreement*: a situation when the two parties seem to disagree without either of them being strictly wrong (Moltmann (2012) discusses similar cases of *faulty agreement*, a situation when the two parties agree on the surface while having different things in mind). The dialogue in (268) says, roughly, that A finds candied grasshoppers delicious while B finds them gross. None of the parties disagrees with what each of them experiences, as per subjectivity. None of them is wrong, so it is a not dispute about facts of the world, as it would have been in a discussion about whether or not candied grasshoppers are available in the nearby grocery store. Specifically for predicates of personal taste, such dialogues often convey the idea that most people would find candied grasshoppers gross, which in turn motivates generic analyses of PPTs (Bhatt and Pancheva 1998; Anand 2009; Pearson 2013a) and which Anand (2009) argues to be an instance of normativity associated with taste ascriptions.

Epistemic modals also give rise to faultless disagreement in that the lack of access to the speaker's exclusive knowledge does not preclude the addressee from disagreeing with the modal claim:

(269)   *Context: Everyone present acknowledges that Joe might be in Berkeley, and so no one thinks there are going to be grounds to assert that he is in Boston. The point of conversation is to settle whether he might be in Boston. So, in the following dialogue:*

       A.   Joe **might** be in Boston.

       B.   That's wrong.

(i) $=$ 'It is not the case that Joe might be in Boston'. **disagreement about** $\Diamond p$
(ii) $\neq$ 'It is not the case that Joe is in Boston'. **disagreement about** p

<div align="right">(adapted from MacFarlane 2011: 148)</div>

(269) is an example of disagreement about the likelihood of p. B's reply cannot be about p itself because everyone knows that it is impossible to defend teh truth of p, as Joe's being in

Berkeley is an open possibility. The reply thus can only target the modal claim. In the literature on modality, such dialogues are often taken to motivate a communal component according to which epistemic modals, or at least some of their uses, track knowledge publicly available (von Fintel and Gillies 2008a, 2010, 2011).

Summing up, with PPTs it possible to deny the taste claim itself—for instance, if the denier talks about their own preference. With EMs, it is possible to deny the modal claim. Below I show that evidentials behave differently and it is not possible to deny the ER, even in a faultless fashion (270).

(270)   Georgian

    A.   tovl-i   **mosula**
        snow-NOM   come.**IND.PST**
        'It snowed, **I hear/infer**.'

    B.   es   ar   aris   martal-i
        it.NOM   NEG   be.3SG:S.PRES   true-NOM
        'That's not true.'

(i)   = 'It is not the case that it snowed'
(ii)   ≠ 'It is not the case that you heard/infer that it snowed'.
(iii)   ≠ 'Given what I hear/infer, it didn't snow'.
(iv)   ≠ 'Given what we all hear/infer, it didn't snow'.

Here I am interested in the not attested interpretations of (270). The denial cannot be understood in a way that B somehow relates to the evidential judgment and evaluates it. If such interpretation were possible, it could be made explicit by something like *That's not true—given what I/we heard/infer, it did not snow*. But such follow-ups are infelicitous. In other words, B's information source and public knowledge are irrelevant for the statements made with evidentials.

As discussed in detail in Chapter 4, the NAI theories of evidentiality predict that explicit denials can only target the scope proposition. The lack of interpretations targeting the ER is explained by appealing to a discourse status of the information contributed by evidentials. Not-at-issue content is not accessible to discourse operations that require a particular level of salience, including denials with propositional anaphor *that*. Under t analysis, the nature of origo is irrelevant as propositional anaphora to the evidential requirement is expected to be banned across the board, regardless of who is Origo. It should be noted, however, that even though the NAI-approaches predict the absence of addressee-oriented readings in dialogues, the logical possibility of such readings is not explicitly acknowledged in the literature. Furthermore, this class of theories has its own problems. In particular, it predicts that all kinds of propositional anaphora should be impossible withe evidentials, while in fact only non-denying anaphora is possible.

Chapter 4, based on the data from dialogues, advocates a subjective analysis of evidentials as first-person mental states. I have shown that evidentials (A) exhibit strong non-challengeability in that they ban all kinds of denials regardless of the strategy used, and (B) allow non-denying

propositional anaphora. These facts follow naturally from the subjective analysis I put forth. To reiterate, subjectivity bans readings wherein a third party contests Origo's epistemic state. It thus explains why the interpretation in (270ii) is absent.

However, just subjectivity does not explain why addressee-oriented readings as in (270iii) and 'communal' readings as in (270iv) are absent. EMs and PPTs are also subjective, but in contrast with evidentials allow them. I propose that the lack of such readings for evidentials is due to the differences in the conventional meaning of evidentials on the one hand, and EMs and PPTs on the other.

The exclusive speaker-orientedness, of evidentials and otherwise, is not hard to derive. In the formal analysis I put forth, Origo is an indexical element, whose reference is determined solely by the context of utterance in root clauses (it can shift in other environments; see Part III).

It is the addressee-oriented and 'communal' readings that are hard to derive and that have served as an argument against strictly contextualist approaches to EMs and to PPTs. Be it group-relativity, assessment-sensitivity, or genericity, there is something special about the semantics of EMs and PPTs which has to be accounted for. The semantics of evidentials just lacks that component, which amounts to the lack of addressee-oriented and communal readings.

My proposal is corroborated by the fact that judge-dependence is not an inherent property of natural language expressions that talk about knowledge or about taste. For instance, knowledge ascriptions via attitude verbs such as *I know* do not exhibit it. The same holds for taste ascriptions via psych verbs as in *It disgusts me*. This is a generalization of a similar point made by Anand (2009) for PPTs and psych verbs talking about taste. Anand uses the contrast between PPTs and psych verbs with similar meanings to motivate genericity-in-semantics approach to PPTs.

One immediate difference between PPTs and EMs on the one hand, and other taste and knowledge ascriptions on the other, is that only with the former the experiencer is covert. However, implicit arguments do no have to be judge-dependent either, as is often discussed for adjectives such as *local*. So the fact that PPTs and EMs have an implicit experiencer does not by itself explain why they exhibit judge-dependence.

To recapitulate, evidentials do not exhibit faultless disagreement, namely, the denial of an evidential claim cannot indicate that the addressee or the relevant community has does not have teh kind of evidence for *p* specified by the evidential. Not all subjective expressions behave this way: EMs and PPTs form are special in that they allow faultless disagreement. I explain this divide within the subjective class in the following way. Expressions that do not give rise to faultless disagreement have an indexical component, explicit as with attitudes or implicit as with evidentials. This component alone does not allow addressee-oriented and communal readings. EMs and PPTs, on the other hand, have a special property, judge-dependence, and this property—regardless of how one goes about analyzing it—guarantees the special readings.

My proposal then does not rule out the existence of judge-dependent ways of talking about evidence in natural language. I see it as a welcome outcome. Tentative support for this view comes from English adverbials such as *allegedly* and *reportedly*. Unlike their grammatical counterparts, these elements seem to have a communal touch. I leave their further investigation for future research.

6.3 Retraction

Another argument against the indexical analyses of epistemic modals comes from retractions, the phenomenon brought up in philosophy of language (MacFarlane 2014; Marques 2015). The pattern is exemplified in (271):

(271) A. Joe might be in Boston.

      B. No, he can't be in Boston. I just saw him an hour ago in Berkeley.

      A. Okay, then, scratch that. I was wrong.   (MacFarlane 2011: 148)

In (271), B admits being wrong in making a statement about the possibility of *p*, and not just *p*, which shows to us that this is not the same as regular belief revision. Such examples demonstrate that *might* does not have to target the speaker's current knowledge and are, in a way, disagreements with oneself.

The literature on evidentiality does not discuss the potential role of retractions in the debate on the relation between evidentials and epistemic modals. Incidentally, the relevant data are well-known under a different name: cancellability.

The empirical observation (first made by Izvorski (1997)) is as follows: the ER cannot be explicitly denied by the speaker.[89] For instance, discourses such as (272b) render nonsensicality across the board:

(272) Georgian

    a. Ivan-s   daurgavs   xe-eb-i
        Ivan-DAT plant.3SG.S.IND.PST tree-PL-NOM
        'Ivan planted many trees, I hear/infer'.

    b. #mastan ert'ad   viqavi
        actually   with.him be.1SG.S.AOR
        Intended: 'Actually, I was with him'.

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89. To preserve historical accuracy, one must say why these data appeared in the literature in the first place. As already discussed earlier in the dissertation, the kind of meaning contributed by evidentials has been one of the central issues in this corner of semantics. Specifically, the data as in (272) has been used to show that the ER is not an conversational implicature.

  Cancellability is a hallmark of conversational implicatures (Sadock 1978). As shown by (ia) below, 'some' implicates 'not all':

(i) a. I tried some sorts of Oolong.
       ⤳ I did not try all sorts of Oolong.

   b. I tried some sorts of Oolong. In fact, I tried all of them.

But 'not all' may be explicitly cancelled, as in (ib). Because the ER is not cancellable, it has been argued to not instantiate an implicature (though see (Lauer 2014) for examples of non-evaporating implicatures).

I argue that (272b) is an instance of retraction of an evidential claim made earlier. Its infelicity highlights another empirical contrast between evidentials and epistemic modals. Similar data are available for e.g. Bulgarian (Izvorski 1997), Cheyenne (Murray 2010), St'át'imcets (Matthewson et al. 2007), or Tagalog (Schwager 2010).

6.4 General discussion

This short chapter is devoted to the judge-independence of evidentials. It probes their behavior in two types of scenarios that have been used to motivate a relativist semantics for epistemic modals and predicates of personal taste. By offering a new angle on the familiar data from denials and cancellability, I demonstrate that evidentials are always speaker-oriented in root declarative clauses and thus are different in an important way from epistemic modals. Because these two types of scenarios show that subjective expressions fall at least into two classes, I further propose that this kind of difference should be encoded in their conventional meaning. EMs and PPTs have somethings special in their semantics that gives rise to judge-dependence. My analysis of evidentials captures the relevant data due to its indexical component. To reiterate the point made earlier, this is not the only analysis that would explain the data.

Another way to factor in (dis)agreement and retraction facts would be to analyze evidentials as indexical modals à la (Papafragou 2006). However, such an analysis would not formally differentiate between judge-dependent epistemics on the one hand, and indexical epistemics on the other.

Using Weatherson and Egan's (2011) helpful analogy, the epistemic or taste authority in a way resembles the referent of *we*. There isn't always a straightforward procedure for recovering said referent, and it may change depending on the audience, namely on who *assesses* the sentence. This point is illustrated by (273):

(273)   We will finish the paper this afternoon, then we will go for a walk.

(Weatherson and Egan 2011: 5)

If the first conjunct is addressed to Brian and the second to Fido, then the sentence in (273) means the following: the speaker and Brian finish the paper, after which the speaker and Fido go for a walk.

Evidentials, on the other hand, are more like *I*. Unless shifted by a special mechanism (see Appendix F (Chapter 7) for a thorough discussion), *I* is *I* no matter what. An interlocutor—or some other assessor—of (274) will not mistake *I* for referring to them, because they know that *I* refers to A, which leads to the infelicity of denials:

(274)   A.   I am a vegetarian.

        B.   #No, I'm not.

The data on disagreement and retractions are pertinent to the theory of evidentiality. First, such data reveal a previously unnoticed parallel between evidentials and indexicals.

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Second, such data point to an important empirical difference between evidentials and epistemics. Notoriously complicated behavior in the disagreement scenarios is a hallmark of epistemic modality as a semantic category, and not just a particular syntactic manifestation thereof. Theories that do not formally distinguish between evidentiality and modality do not, and cannot, predict this difference.

Part III

Varieties of evidential shift

CHAPTER 7

Evidential shift in attitudes

Abstract: This chapter builds on the material from Chapter 5 and is a precursor to Chapter 8. I start with the empirical observation that languages vary with respect to whether or not evidentials-in-attitudes *shift*, i.e. whether they are speaker-oriented (as in root declaratives) or not. The variation has been previously attributed to semantic non-uniformity of evidentials. I argue against that view: first, shifting in attitudes does not correlate with other properties of evidentials, and second, the modal-illocutionary dichotomy is in fact not helpful in deriving the interpretational differences in shifting. I propose that evidential shift is an instance of indexical shift driven by a monster operator à la Anand and Nevins (2004), which explains previously unnoticed similarities in restrictions on both kinds of shift.

7.1 Introduction

Consider a root declarative wherein an evidential adverbial reflects the speaker's judgment:

(275)   Tar sands are **evidently** an unmitigated disaster for the environment.[90]

Attitudinal complements are environments wherein evidentials do not have to be speaker-oriented:

(276)   What shallow, worthless, selfish lives and yet these are the same false gods that Republicans worship since the Right believes that wealth is **allegedly** a divine gift.[91]

(277)   *Context: For a number of years now* the Australian *newspaper has engaged in guerrilla warfare with the progressive parties in general. But, with the Australian Greens, ordinary sneaky guerrilla tactics are way too subtle.*

   The Australian believes that the Greens, **apparently**, deserve a nuclear takeout.[92]

The most salient reading of (276) is such that *allegedly* embedded under *believe* reflects the speaker's evidential judgment, but not that of the attitude subject, the Right. Conversely, the most salient reading of (277) is such that *apparently* embedded under *believe* reflects the opinion of the attitude subject, *the Australian*, but not that of the speaker. Following Garrett (2001), I will refer to cases of switch in orientation from the speaker to the attitude subject (as in 277) as *shift*.

It has been noticed that evidentials in some languages shift, as in (277), while in some others they do not, as in (276). This variation has been regarded as supporting the dichotomy view: modal evidentials are expected to shift, while illocutionary evidentials are expected to remain speaker-oriented. This view does not predict the existence of evidentials that allow both shifted and non-shifted interpretations without postulating accidental homophony. Furthermore, under accounts that parallel evidentials and supplements (most notably (Murray 2010, 2014), also (Koev 2016)), it is expected that evidentials would optionally shift, just like appositives (Harris and Potts 2009). Then, the existence of non-shifting evidentials is a mystery. Finally, the modal view on evidentiality does not predict the variation either, as it does not explain non-shifting and optionally-shifting evidentials. I will argue that evidential shift is akin to indexical shift, which allows us to neatly capture the variation by maintaining a unified semantics for all evidentials regardless of their shifting profile.

Section §7.2 lays out the core data. Section §7.3 reviews previous approaches. Section §7.4 provides a formal mechanism for evidential shift. Section §7.5 concludes.

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90. From *The Guardian*; http://goo.gl/EfXDWA.
91. From *The Huffington Post*; http://goo.gl/AoWV34.
92. From http://goo.gl/AWjixN.

7.2 Empirical landscape

In Chapter 5, I have shown that evidentials-in-attitudes obey a universal constraint: they resist third-party assessment and only allow readings such that Origo self-ascribes having relevant evidence. I have argued that the formal representation of this property must ensure that the individual and world the evidential is evaluated with respect to must be shifted or non-shifted together, either (A) as part of the context, the treatment that I adopt; or (B) as part of the index, if Stephenson's (2007a) system is to be used, which seems to be implicitly assumed by modal theories of evidentiality.

In this section, I show that languages vary in which interpretation of the self-ascribed ones they allow: non-shifted, shifted, or both. I will use *non-shifted* as a shortcut for the interpretation where both the individual argument and the world do not shift. In a similar fashion, the term *shifted* will be a shortcut for shift of both Origo and the world.

7.2.1 No shift

In some languages, evidentials-in-attitudes are obligatorily speaker-oriented. This is the case in Georgian, illustrated below, and also dialects of Bulgarian (South Slavic) reported in (Sauerland and Schenner 2007; Koev 2016):

(278) Georgian
Context: Maria and Nana are supervising monks' work on translation. I've heard about it from Nana. Later, Maria also tells me about it.

maria-ma	mitxra	[	rom	ber-eb-s	biblia	kartul-ad
Maria-ERG	tell.1SG.IO.AOR	[	COMP	monk-PL-DAT	Bible.NOM	Georgian-ADV

gadautargmniat]
translate.3PL.S.**IND.PST**]

NON-SHIFTED: 'Maria told me that—*and I was told that already*—the monks translated the Bible into Georgian.'

In (278), the context forces a non-shifted interpretation: the speaker has hearsay information about the scope proposition, while Maria knows it directly.[93] The sentence can be used in this scenario.

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93. Note that Maria cannot be the source of information so it is a genuine speaker-oriented reading rather than an evidential concord reading wherein evidential just repeats the content of the attitude verb; such readings are discussed by Schenner (2010a) for German, Boeder (2000) for Georgian, Schwager (2010) for Tagalog, and Matthewson et al. (2007) for St'át'imcets.

(279) Georgian

Context, subject-oriented: The priest is supervising monks' work and tells Maria about it. She then tells me but I actually know it directly as I was helping the monks.

#maria-ma mitxra [rom ber-eb-s biblia kartul-ad
Maria-ERG tell1SG.IO.AOR [COMP monk-PL-DAT Bible.NOM Georgian-ADV
gadautargmniat]
translate.3PL.S.**IND.PST**]

Intended: SHIFTED: 'Maria told me that, *as she was told*, the monks translated the Bible into Georgian.'

In (279), the context forces a shifted reading: the speaker knows for sure about the translation, while the attitude subject, Maria, has hearsay information about it. The sentence cannot be used in this context, which indicates that Georgian evidential past has to be interpreted with respect to the speaker.

7.2.2 Optional shift

In some other languages, embedded evidentials can be interpreted either with respect to the speaker or the attitude subject. This is the case in Turkish (Şener 2011) and at least some dialects in Bulgarian (Roumyana Pancheva, p.c.). (280) and (281), partially repeated from (212) illustrates the relevant contrast for Turkish.

(280) Turkish

Context: I was told by Mary, Anna's roommate, that Anna got a dog. Jay visited them recently and has seen the dog himself.

Jay [Anna bir köpek al-**mış**] di-yor.
Jay [Anna INDEF puppy get-**IND.PST**] say-PST

NON-SHIFTED: 'Jay said that–*and I've heard it*–Anna got a puppy.'

The context in (280) forces a non-shifted reading: the speaker has seen Anna's dog yet but has heard about it, while Jay, the attitude subject, has firsthand experience with the dog.

(281) Turkish

Context: I recently visited Anna and found out that she finally got a dog. Jay hasn't visited yet, but she called him to share the news.

Jay [Anna bir köpek al-**mış**] di-yor.
Jay [Anna INDEF puppy get-**IND.PST**] say-PST

SHIFTED: 'Jay said that, *as he has heard*, Anna got a puppy.'

In (281), the context forces a shifted interpretation: the speaker has direct evidence about Anna's having a dog, while Jay has been told about it. That one and the same sentence can be felicitously used in both types of contexts, speaker- and subject-oriented, shows that *mIş* shifts optionally.

7.2.3 Obligatory shift

Finally, there are languages where evidentials in attitude reports shift obligatorily. This is the case in Japanese; Korean (Lee 2013); Standard Tibetan (Tibeto-Burman; Garrett 2001); St'át'imcets (Salish; Matthewson et al. 2007); Zazaki (Iranian; Gajewski 2004).

(282) Korean: perceptual marker *te*

Yenghi-nun [Chelswu-ka   khaley-lul mek-**te**-la-ko   ] malha-yess-ta
Yenghi-TOP [Chelswu-NOM curry-ACC eat-**TE**-DECL-COMP] say-PST-DECL

    a. NON-SHIFTED: #'Yenghi said that–*and I have perceived it*–Chelswu ate the curry'. Infelicity of the follow-up 1 confirms absence of this reading: #But Yenghi did not see or otherwise observe Chelswu eating the curry. She heard about it from his neighbor.

    b. SHIFTED: 'Yenghi said that, *as she has perceived*, Chelswu ate the curry'. Felicity of the follow-up 2 confirms presence of this reading: But I did not see or otherwise observe it.   (based on Lee 2013: ex.7c)

In (282), different follow-ups probe whether the evidential shifts or not. If it can be speaker-oriented, then the attitude subject, Yenghi, does not have to have perceptual evidence for Chelswu's curry-consumption. However, explicitly indicating that Yenghi did not see or otherwise perceive it results in infelicity, as shown in (282a). If *te* can shift, then it is the speaker who does not have to endorse the evidential claim. As shown in (282b), this continuation is felicitous.

7.2.4 Recap

In this section shows that, on top a universal constraint due to subjectivity, there are language-specific restrictions on the range of interpretations of evidentials-in-attitudes. Languages fall into three classes with respect to which perspective evidentials may take:

(283)   A. **No evidential shift:** Georgian, Bulgarian*

      B. **Optional evidential shift:** German, Turkish, Bulgarian*

      C. **Obligatory evidential shift:** Korean, Japanese, St'át'imcets, Tibetan, Zazaki
         * for some speakers

    It is not a novel observation that such variation exists. However, this dissertation offers the first systematic study thereof. In the next section I discuss how the facts are handled by the current theories.

7.3 Previous approaches

This section recapitulates major points of the discussion in §5.3 with an eye on the cross-linguistic variation in evidential shift. Specifically, I show that that there is no non-stipulative way to parameterize shifting within the theories already on the market.

According to the modal view on evidentiality, all evidentials can be assigned a unified modal semantics and the variation comes from elsewhere. However, given the fundamental assumptions at the core of theories of modal shift, it is problematic to derive the lack of shifting, both optional as in Turkish and obligatory as in Georgian, so the modal view under-generates.

According to the dichotomy view on evidentiality, speaker-oriented readings arise due to the illocutionary nature of respective markers. However, the predictions of illocutionary theories with respect to embedding are hard to evaluate because the range of interpretations of the embedded speech-act material is poorly understood. According to one view, such material must shift, which again leads to under-generation, and according to another, it undergoes optional pragmatic shift.

To sum up, none of theories, or a combination thereof, fully predicts the behavior of evidentials.

7.3.1 Modal approaches

As discussed in detail in §5.3.1, the accounts of epistemics-in-attitudes are designed in a way that forces epistemics to be subject-oriented. This treatment has been motivated by examples such as in (284, repeated from 218):

(284)   Scylla thinks [that Odysseus' ship **might** pass Charybdis].

   a.   NON-SHIFTED, SPEAKER-ORIENTED: # . . . but Scylla is sure it would pass.

   b.   SHIFTED, SUBJECT-ORIENTED: ✓. . . but I am sure it would pass.

There are several mechanisms that ensure that the only available reading for *might*-under-*think* is the one in (284b) and not the one in (284a), such as Stephenson's (2007b; 2007a) and Hacquard's (2006; 2010). The common denominator of these approaches is that the obligatory shift of epistemic modal auxiliaries is a non-arbitrary property of grammar. For Stephenson, modals are judge-dependent and attitude predicates quantify over judge-centered worlds, which amounts to the shifted readings in attitudes. For Hacquard (and in a somewhat similar system in (Yalcin 2007)), the shift comes for free with the event-relativity. Given the general constraints on the interpretation of silent pronouns (Farkas 1997; Percus 2000), the event variable of epistemics is bound by the closest binder, which makes the speech event inaccessible in attitudes and makes epistemics subject-oriented.

According to the modal view on evidentiality (Matthewson 2012), all evidentials, regardless of their shifting profile, should be amenable to a modal analysis. However, the frameworks above by design make it problematic to derive the non-shifted readings of evidentials in e.g.

Georgian. One of the escape routes would be to argue that some evidentials are obligatory anchored to the speaker (or speech event), which would be an equivalent of saying that such evidentials are indexical (cf. Papafragou's (2006) treatment of subjective epistemics).

There are three problems with this potential solution. First, it would introduce semantic variation that is otherwise unmotivated: there is no evidence that shifted and non-shifted evidentials are semantically different. Second, the existence of optionally-shifting evidentials would not follow from the system unless such evidentials are derived as a result of accidental lexical ambiguity. Finally, Chapter 6 shows that epistemic modality as a semantic category does not exhibit the same type of context-sensitivity as indexicals. Therefore, while it is technically possible to have indexical epistemic modals, it would no longer reflect the perceived similarity between epistemics and (some) evidentials—the similarity that has served as a motivation for the modal analyses of evidentiality in the first place.

It must be noted that the landscape of modality is not exhausted by modal auxiliaries. The behavior of modals in attributive positions suggests that the modal shift isn't always obligatory, as illustrated by *possible* in (285) below:

(285) *Context: Meaghan and I are lost in the backcountry. We managed to get stranded on a ledge from which we can proceed no further.*

Meaghan said that a cliff was overhanging a **possible** escape route.

  a. NON-SHIFTED, SPEAKER-ORIENTED: ✓. . . but she thinks that this route that I pointed to will eventually turn into a dead-end.

  b. shifted, subject-oriented: ✓. . . but I think that the route she pointed to will eventually turn into a dead-end.

English modal adjectives do not have to shift: *possible* may be speaker-oriented if used within a DP.

For similar facts about predicates of personal taste (286), Anand and Korotkova (2016) argue that non-shifted readings result from the obligatory 'de re' construal of the entire DP.

(286) *Meaghan is fond of kimchi while I hate it.*

  a. #**Meaghan** thinks that this kimchi is **delicious**$_{MEAGHAN}$ and **gross**$_{SPEAKER}$.

  b. ✓**Meaghan** thinks that this **gross**$_{SPEAKER}$ kimchi is **delicious**$_{MEAGHAN}$.

While (286a) is contradictory and attributes to Meaghan opposite opinions regarding the taste of kimchi, (286b) is not. Only one of the adjectives, *delicious*, is relativized to Meaghan, while the other one, *gross*, is relativized to the speaker. As (287) shows, the speaker-oriented reading may only arises when the PPT-containing DP is interpreted 'de re':

(287) *Context: Mary and Sue are debating several items of clothing in a catalog. They happen on an item that Sue believes is a beautiful dress and Mary an ugly poncho.*

a. ✓**Sue**: **Mary** thought that a **[beautiful dress]**$_{SUE}$ was ugly.

b. # **Sue**: **Mary** thought that a **[beautiful]**$_{SUE}$ **[poncho]**$_{MARY}$ was ugly.

<div align="right">(Anand and Korotkova 2016)</div>

In (287), for *beautiful* to be anchored to Sue, she also has to admit that the item in question is a dress.

Such cases as (285) and (286) indicate that the obligatory nature of shift does not have to be hardwired to the semantics of epistemic modals and taste predicates but rather has to do with syntax. Adjectives in the predicative position and modal auxiliaries as in (218) are part of the verbal spine and have to shift. Additionally, adjectives, but may be used attributively and it is when they are allowed to be speaker-oriented (similar facts in fact hold for epistemic modal auxiliaries in relative clauses).

It is tempting to pursue an analysis that derives the difference between speaker-oriented and subject-oriented evidentials along the same lines. However, it would be preliminary at best to automatically assume that evidentials in e.g. Georgian (no shift) and Turkish (optional shift) have a different syntax. The existing evidence suggests the opposite. For instance, both in Georgian and in Turkish evidentials are part of the tense system (see Chapter 3 for discussion). Moreover, evidentials of different syntactic types may have the same shifting profile. For instance, evidentials in Tibetan and in St'át'imcets obligatorily shift, even though Tibetan evidentials are copular (Garrett 2001), and in St'át'imcets they are clitics (Matthewson et al. 2007).

Summing up, the modal view on evidentiality is insufficient as it fails to derive speaker-oriented readings of evidentials-in-attitudes. It undermines Matthewson's (2012) idea that all evidentials are Kratzerian epistemic modals. However, the possibility of the dichotomy view remains open. Under this view, non-shifted readings characterize illocutionary evidentials. The next section discusses disadvantages of the dichotomy view and particular implementations thereof.

7.3.2 Illocutionary approaches

Cross-linguistic variation in evidential shift has been often regarded as supporting the dichotomy view on evidentiality. It has been argued that the presence or absence of shifted readings can be used as an empirical diagnostic: shifted readings only occur with modal evidentials, while non-shifted readings occur with illocutionary evidentials.

I have shown elsewhere in the dissertation that the very distinction between the two classes is not justified empirically. Specifically, there are no other semantic distinctions that correlate with the presence or absence of shift. Furthermore, the dichotomy view fails to predict the existence of optionally-shifting evidentials. For languages such as Turkish, it has to postulate accidental homophony between the modal *mIş*, which shifts, and the illocutionary *mIş*, which does not shift.

These considerations alone suggest that the dichotomy view on evidentiality fails to derive the variation. Below I show that the existing proposals do not in fact predict that illocutionary

elements will remain speaker-oriented in embedded environments, contrary to a widespread assumption.

Faller (2002)-style analysis   In Faller's (2002) original analysis, evidentials that deal with speech acts have to be non-embeddable because speech acts are non-embeddable. Chapter 3 discusses different analytical options that would preserve the spirit of Faller's view while also allowing for embedding. One of such options is developed in (Korotkova ming), where I re-cast Faller's view within a fully-compositional Krifka's (2014) system.

Assuming that a distinctive property of speech acts is that they deal with discourse commitments, embedded speech acts could be recognized by a shift in commitments, from the speaker to the attitude subject, see discussion in § 5.3.2. Therefore, embedded illocutionary evidentials would shift.

I am not claiming that illocutionary material is in fact embeddable—there is very little discussion of this entire issue in the semantic literature. However, if it is embeddable, it is expected to shift. This expectation undermines the dichotomy view on evidentiality, wherein shifted readings supposedly diagnose modal evidentials and speaker-oriented readings are unique to illocutionary evidentials.

Murray (2010)-style analysis   It has been argued that the non-shifted readings of evidentials arise because the ER obligatorily projects in attitudinal complements, which is an argument for treating evidentials on a par with supplements (the argument made by Koev (2016); the framework first proposed by Murray (2010, 2014)).

However, it is incorrect to say that supplements are obligatory speaker-oriented. As pointed out by Amaral et al. (2007) and shown by Harris and Potts (2009), supplements may shift. They can shift in attitudinal complements, as illustrated in (288, repeated from 230):

(288)   *Context: My aunt is extremely skeptical of doctors in general.*

She says that dentists, **who are only in it for the money anyway**$_{AUNT}$, are not to be trusted at all. (Harris and Potts 2009: Appendix A, ex.3)

Furthermore, the perspective shift of supplements does not require explicit syntactic embedding, and they may shift across sentence boundaries, as illustrated in XX:

(289)   *Context*: My aunt is extremely skeptical of doctors in general.

Dentists, **[who are only in it for the money anyway]**$_{AUNT}$, are not to be trusted at all. (Harris and Potts 2009: Appendix A, ex.3)

Given the same attitude-fixing context as in (230), the relative clause in (289) may shift even in the non-embedded case. In other words, an overt attitude operator is not necessary to shift supplements. Harris and Potts argue that this is indicative of the pragmatic nature of the shift. Alternatively, the cases of shift across sentence boundary as in (289) may well instantiate *Free*

Indirect Discourse (FID), a narrative technique used for reporting speech or thought of others without explicit embedding (Schlenker 2004; Sharvit 2008; Eckardt 2014; Maier 2015b). Shift then can be accounted for in structural terms if the appositive is in the scope of a covert attitudinal operator, as some analyses of FID suggest. See Harris (2012) for discussion.

If evidentials behave in the exact same way as supplements, the existence of the non-shifting evidentials is a mystery. Murray (2012a) analyzes Cheyenne evidentials as contributing not-at-issue content with an added indexical component. As I have argued in Chapter 4, the indexical component alone guarantees that evidentials would remain speaker-oriented in attitudes.

Furthermore, the evidentials-as-supplements analysis predicts that evidentials, too, would be able to shift across sentence boundaries. The prediction is not borne out:

(290)   Turkish
        Context: I spoke to my father.
        hastalan-**mış**
        get.sick-**IND;PST**

    (i)   non-shifted, speaker-oriented: ✓'He is sick, *I heard*'.

    (ii)   shifted, father-oriented: #'He is sick, *he heard*'.

Turkish is an evidential-shifting language, and *mIş* can have a shifted interpretation in *bona fide* attitude reports (281). As (290) shows, only speaker-oriented readings are available in the absence of explicit embedding.

A note should be made that such environments, despite the lack of an overt attitudinal operator, may have a covert one. Harris and Potts argue that cases as in (289) is indicative of the pragmatic nature of the supplement shift. Alternatively, such cases of shift across the sentence boundary may well instantiate *Free Indirect Discourse* (FID), a narrative technique used for reporting speech or thought of others without explicit embedding (Schlenker 2004; Sharvit 2008; Eckardt 2014; Maier 2015b). The shift then can be accounted for in structural terms if the appositive is in the scope of a covert attitudinal operator, as some analyses of FID suggest. See Harris (2012) for discussion on appositives. The fact that evidentials do not shift in such environments further supports an indexical analysis, because personal indexicals such as *I* do not shift in FID (see § 7.4.4). I leave further investigation of evidentials in the contexts of FID for future research.

To sum up, the parallelism between supplements and evidentials (expected in the NAI analyses) is not observed in attitudes. The facts do not exclude an analysis wherein evidentials contribute NAI content. However, the discourse status of ER alone does not explain the shifting behavior of evidentials.

7.3.3   Recap

The current views on the cross-linguistic variation in evidentiality do not address evidentials-in-attitudes in detail and, as a result, fall short at explaining the actual variation.

Based on the behavior of epistemic modal auxiliaries, it is assumed that modal evidentials are the ones that shift. Capturing evidential shift is then straightforward by taking one of the mechanisms of modal shift off the shelf—these accounts are designed in a way that makes the shift automatic. Changing it, while technically possible, would ruin intuitions about the syntax and semantics of modality that drive those approaches, which means that there is no good way to account for speaker-oriented readings of evidentials and ultimately speaks against the modal view on evidentiality (Matthewson 2012). Furthermore, not all modals shift. Bringing up novel data on epistemic adjectives, I show that the obligatory shift is a property of the main predicate position, rather than the lexical property of epistemic modals. This drives home the point that modality is defined loosely in the literature on evidentiality.

Similar problems arise with the idea that illocutionary evidentials have to remain speaker-oriented. In frameworks that have a syntactic representation for the speech-act material and allow for embedding of said material, the expectation is that illocutionary elements shift. This is so because, once embedded, they become anchored to the participants of the speech act described by the attitude predicate and not those of the actual utterance. *A priori*, evidentials could be subsumed under the same analysis but the semantic literature does not acknowledge the existence of such frameworks.

In frameworks that parallel evidentials to supplements, the expectation is that both kinds of expressions would exhibit a similar shifting pattern. Supplements are subject to an optional shift in attitudes and may shift even without an overt embedder. Evidential shift, on the other hand, is more constrained structurally and requires embedding under an attitude verb. Furthermore, there are languages where evidentials do not shift at all, which is not predicted.

The moral is that the modal-illocutionary distinction does not, in and of itself, predict whether or not evidentials would shift in a given language. There are some modal elements that shift and some that do not. There are illocutionary elements that are expected to shift. There are also supplements that prefer speaker orientation but may shift if forced. Ancillary assumptions are required to derive the precise patterns of evidential shift under any of the current analyses. And if that is the case, the modal-illocutionary divide may not be the right way to cut the evidential pie.

7.4 Proposal

I propose that shifted evidentiality is a variety of shifted indexicality. Both share the following property: shift is non-automatic, in the sense that the semantic category does not define whether or not an element belonging to it would shift in a given language. This is in contrast, for instance, with predicative uses of epistemic modals and predicates of personal taste, which always shift when embedded, or with supplements, which may undergo optional shift.

In English, indexicals such as *I* are insensitive to intensional quantification and do not change their value in attitude reports. As was first brought up by Schlenker (1999, 2003) for a Semitic language Amharic (data from Leslau 1995) and was later discovered for many unrelated languages, the behavior of English *I* is not universal (pace Kaplan 1977/1989). Configurations with the shifted *I* in indexical-shifting languages resemble English direct discourse:

(291)   **Gloria Steinem** said: "I should fight the patriarchy".

      (i)   NON-SHIFTED: #**Gloria Steinem** said: "$I_{SPEAKER}$ should fight the patriarchy"

      (ii)   SHIFTED: ✓**Gloria Steinem** said: "I_{GS} should fight the patriarchy"

In (291), *I* has to shift: when within a quote, the pronoun can only refer to Gloria Steinem (as in 291i) but not to the actual utterer of the sentence (as in 291ii). The difference between English and indexical-shifting languages is that in the latter the shift also occurs in *bona fide* embedded clauses and is not limited to direct quotation, unlike what we see in English and other familiar languages.

The typology of languages vis-a-vis the shift of indexical pronouns such as *I* closely resembles the emerging typology of languages vis-a-vis evidential shift (293, repeated from 283): no-shift languages, optional-shift languages, obligatory-shift languages (note, however, that languages that exhibit one kind of shift are not necessarily languages that exhibit another kind of shift.).[94]

(292)   Typology of indexical shift

    A. **No pronominal shift:** English; French; Russian; . . .

    B. **Optional pronominal shift:** Aghem (Bantu), Amharic (Semitic) (Schlenker 1999, 2003, secondhand data from (Hyman 1979) and (Leslau 1995)); Japanese (Sudo 2012); Korean (Park 2014); Kurmanji (Iranian; Koev 2013); Mishar Tatar (Turkic; Podobryaev 2014), Navajo (Athabaskan; Speas 1999); Nez Perce (Sahaptian; Deal 2014); Slave (Northern Athapaskan; Rice 1986); Tamil (Dravidian; Sundaresan 2012); Tsez (Nakh-Daghestanian; Polinsky 2015); Turkish (Turkic; Gültekin Şener and Şener 2011; Özyildiz 2013); Zazaki (Iranian; Anand and Nevins 2004; Anand 2006)

    C. **Obligatory pronominal shift:** Balkar (Turkic; Koval 2014); Matses (Panoan; Munro et al. 2012); Uyghur (Turkic; Shklovsky and Sudo 2014; Sudo 2012)

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94. Sign languages are often considered among indexical-shifting languages, see Quer (2005) on Catalan Sign language. However, pronominal indexical shift in sign languages differs in an important way.

In spoken languages indexicals shift in attitude reports, e.g. complements of speech verbs. In sign languages the licensing conditions are different: indexicals shift under *Role Shift*, a dedicated grammatical construction that often marks an attitudinal complement but is also used in other environments. Role Shift is a distinguished mechanism that represents the point of view or behavior of others and is characterized by non-manual co-articulation, such as body movement or breaking the eye gaze with the addressee. One variety thereof, *Attitude Role Shift*, is used for reporting the speech and thought of others and is often discussed as a means of indirect discourse. Another variety, *Action Role Shift*, or *Constructed Action*, is used for imitating somebody's actions. For more details and discussion, see e.g. (Herrmann and Steinbach 2012) on German Sign languages, (Quer 2011, 2013) on Catalan Sign language, and (Lillo-Martin 2012) on American Sign language (ASL).

The exact status and analysis of Role Shift is a matter of a debate. Schlenker (2015, 2016), based on the data from ASL and French Sign Language, argues that Role Shift is driven by roughly the same mechanism as pronominal indexical shift in spoken languages. Davidson (2015), on the other hand, based on the ASL data, emphasizes iconicity unique to sign languages and treats Role Shift similar to the "be like" construction in English. Given this debate, I will not discuss sign languages in what follows.

(293) Typology of evidential shift

      A. **No evidential shift:** Georgian, Bulgarian*

      B. **Optional evidential shift:** German, Turkish, Bulgarian*

      C. **Obligatory evidential shift:** Korean, Japanese, St'át'imcets, Tibetan, Zazaki
         * for some speakers

Based on this and other similarities, I will analyze evidential shift as a variety of indexical shift of the kind observed in languages 292B and 292C. I adopt the analysis according to which different kinds of shift are driven by context-shifting operators, monsters, located at the left periphery of the clause. Appendix F contains a detailed comparison of approaches to the phenomenon of indexical shift.

7.4.1 Indexical shift

The pattern   This section illustrates the phenomenon of indexical shift with an optional-shift language Mishar Tatar (Turkic), drawing on the data and discussion from (Podobryaev 2014). Other indexical-shifting languages behave similarly.

Mishar is a *pro*-drop language wherein pronouns may be omitted provided the agreement marking on the verb is present. These null pronouns may optionally shift.[95] In (294), the null first-person subject pronoun (diagnosed by the presence of agreement) may refer to the actual speaker as in (294i) or to the attitude subject as in (294ii):

(294) Mishar Tatar: optional indexical shift
      alsu [pro_{SUBJ} šäxär-gä kit-te-**m**   diep   ] at'-tɣ
      alsu [pro city-DAT go.out-PST-**1SG** COMP] say-PST

      (i)   NON-SHIFTED: 'Alsu said that I$_{speaker}$ went to the city.'

      (ii)   SHIFTED: 'Alsu said that she$_{Alsu}$ went to the city.'

                                      (Podobryaev 2014: 83, ex.200)

When investigating putative cases of indexical shift, it is important to make sure (i) that the complement is embedded and not quoted; and (ii) that pronouns are indexicals and not definite descriptions. Mishar satisfies both conditions.

The availability of cross-clausal dependencies ensures that the complement is embedded:

(295) Mishar Tatar: indexical shift over wh-question
      alsu [pro_{SUBJ} kaja   kit-te-**m**   diep   ] at'-tɣ
      alsu [pro where go.out-PST-**1SG** COMP] say-PST

---

95. Overt pronouns in this language cannot shift, which Podobryaev (2014) attributes to their being truly context-dependent, unlike null pronouns, which he treats as assignment-dependent. While not central to my purposes here, an alternative explanation could be furnished along the lines of anti-logophoricity.

(i)   non-shifted: '[Which place]$_i$ did Alsu say I$_{speaker}$ went t_i'

(ii)   shifted: '[Which place]$_i$ did Alsu say she$_{Alsu}$ went t_i'

<div align="right">(adapted from Podobryaev 2014: 84, ex.202)</div>

Mishar Tatar, as is common for Turkic languages, is *wh*-in-situ, so there is no overt extraction in (295). But the interpretation signals that (295) is a genuine question calling for an answer, which would have been impossible with quotation. As shown in (295ii), a shifted reading of the pronoun is possible. This fact demonstrates that the shifted parses such as (294ii) cannot be reduced to quotation.

Insensitivity to intensional quantification is one of the necessary conditions for being a Kaplanian indexical. In languages like English, where indexicals do not shift in attitudes, this alone is enough to show that their value remains intact across syntactic environments. The availability of indexical shift as an analytical option complicates the picture. Shiftable indexicals could have the same semantics as definite descriptions of the likes of *the person who is talking*. Therefore, in indexical-shifting languages, it is important to additionally demonstrate that putative indexicals remain intact in the scope of quantifiers other than attitude verbs. (296) below highlights the contrast between a definite description 'the one who is talking' and a null pronoun in Mishar:

(296)   Mishar Tatar

    a.   Co-variation with a quantifier: definite description
        kajčan marat$_i$ sül-i,   [**kem sülä-gän**]$_i$ xär-vakɤt   alsu turɤnda at'-ä
        when   Marat talk-IPV [**who talk-PRV**] every-time Alsu about   tell-IPV
        'When Marat talks, the speaker always talks about Alsu.'

    b.   Co-variation with a quantifier: null pronoun
        kajčan marat sül-i,   xär-vakɤt   alsu turɤnda at'-ä-**m**
        when   Marat talk-IPV every-time Alsu about   tell-IPV-**1SG**
        'When Marat talks, I always talk about Alsu.'

<div align="right">(Podobryaev 2014: 99, ex.242a-b)</div>

The definite description may co-vary with a temporal quantifier and refer to Marat (as in 296a), while the null pronoun has to refer to the actual speaker (as in 296b).

Formal treatment of indexical shift   There are several families of approaches to indexical shift:

A. **Binding approaches** claim that the difference between languages with and without indexical shift is in the binding conditions on pronouns: while English *I* has to be bound at the matrix level, and e.g. Mishar *I* doesn't have to be (Schlenker 1999, 2003; von Stechow 2002);

B. **Operator-based approaches** claim that indexical shift is due to a context-shifting operator that overwrites the value of context coordinates that indexicals get their value from (Anand and Nevins 2004; Anand 2006; Sudo 2012; Shklovsky and Sudo 2014);

C. **Pragmatic approaches** claim that indexical shift is not a grammatical mechanism, but rather is an instance of mixed quotation (Maier 2007) or a result of perspectival re-centering (Bittner 2007, 2012; Koev 2013).

These approaches have been motivated by different facts, and differ in how the handle restrictions on indexical shift, many of them language-specific:

I. **Shift-Together effects:** In Zazaki, within one syntactic domain either all indexicals shift or none shifts, similar effects were later observed for other languages;

II. **Semantic differences between indexicals:** In (Deal 2014) and Korean (Park 2015), the shifting behavior of personal and non-personal indexicals is not uniform;

III. **Different verbs:** Across languages, not all attitude predicates license indexical shift, and the set of predicates differs from language to language;

IV. **No shift in nominalizations:** Uyghur (Sudo 2012; Shklovsky and Sudo 2014), Turkish (Gültekin Şener and Şener 2011), Korean (Park 2015) and Mishar (Podobryaev 2014) do not license indexical shift in TP nominalizations, even under predicates that license it in finite complements;

V. **Structural asymmetry** In Uyghur (Sudo 2012; Shklovsky and Sudo 2014), only the structurally lower nominative subjects of complement clauses may shift, while the structurally higher accusative subjects never shift.

Some of the constraints above are clearly related to the grammar (e.g. the ban on shift in nominalizations), and therefore are not derived within purely semantic and pragmatic theories of indexical shift. Some other constraints suggest that there are dependencies between the shifting behavior of different kinds of indexicals, which is easily amenable to an operator-based solution but would require ancillary assumptions otherwise.

Overall, theories of indexical shift that postulate a context-shifting operator in the syntax are better suited for handling the constraints above and for parameterizing cross-linguistic variation. In what follows, I adopt an operator view on indexical shift and propose an operator responsible for evidential shift. See Appendix F for a detailed discussion of different properties of, and approaches to, indexical shift.

Under the view I opt for, the indexical shift in languages such as Mishar Tatar is due to a monster operator, 👻, in the lexicon (the technical implementation is different from the one used by Podobryaev (2014)):

(297) $[\![\text{👻} \phi_{k,t}]\!]^{c,i,g} = [\![\phi]\!]^{i,i,g}$

This monster, when present, overwrites the context, which results in the shift of indexical pronouns. The derivation for the shifted interpretation of (298a, repeated from 294) is given in (298c) below:

(298) a. Mishar Tatar: shifted reading of *I*

alsu [pro_{SUBJ} šäxär-gä kit-te-**m** diep] at'-tɤ
alsu [pro city-DAT go.out-PST-**1SG** COMP] say-PST
SHIFTED: 'Alsu said that she$_{Alsu}$ went to the city.'

(Podobryaev 2014: 83, ex.200)

  b. LF: [Alsu said [👻 [I went to the city]]]

  c. $[\![(298a)]\!]^{c,i,g}$
$= [\![\text{say}]\!]^{c,i,g}(\lambda i'. [\![\text{👻} [\text{I went to the city}]]\!]^{c,i',g})([\![\text{Alsu}]\!]^{c,i,g})$
$= 1$ iff $\forall i'$ compatible with what Alsu said at i, $[\![\text{👻} [\text{I went to the city}]]\!]^{c,i',g}$
$= 1$ iff $\forall i'$ compatible with what Alsu said at i, $[\![\text{I went to the city}]\!]^{i',i',g}$
$= 1$ iff $\forall i'$ compatible with what Alsu said at i, AUTHOR(i') went to the city at i'

7.4.2 Analysis

I propose that evidential-shifting languages have the following operator in their lexicon, modelled after context-shifters in (Anand and Nevins 2004; Deal 2014):

(299) $[\![\text{👻}_{EV} \ \phi_{k,t}]\!]^{\langle Author_c, \boldsymbol{Origo_c}, ..., \boldsymbol{w_c} \rangle, i, g} = [\![\phi]\!]^{\langle Author_c, \boldsymbol{Origo_i}, ..., \boldsymbol{w_i} \rangle, i, g}$

The sole function of monsters is to overwrite context coordinate(s), this is why it is important to ensure that index and context are of the same type. The evidential monster 👻$_{EV}$ takes the *Origo* and *World* coordinates of the context parameter ORIGO(c) and WORLD(c), and changes them to the *Origo* and *World* coordinates of the index parameter ORIGO(i) and WORLD(i), while everything else remains the same. Given that ORIGO(i)=AUTHOR(i) (speaker default in (246)), in attitudinal complements this results in the evidential shift to the attitude subject whenever the monster is present:

(300) $[\![\text{think} \ \text{👻}_{EV} \ \phi]\!]^{\langle Author_c, \boldsymbol{Origo_c}, ..., \boldsymbol{w_c} \rangle, i, g}$
$= \lambda x. \forall i'$ compatible with what x thinks at i, $[\![\text{👻}_{EV} \ \phi]\!]^{\langle Author_c, \boldsymbol{Origo_c}, ..., \boldsymbol{w_c} \rangle, i', g}$
$= \lambda x. \forall i'$ compatible with what x thinks at i, $[\![\phi]\!]^{\langle Author_c, \boldsymbol{Origo_{i'}}, ..., \boldsymbol{w_i} \rangle, i', g}$

At the same time, indexical elements sensitive to other context coordinates are intact (see discussion at the end of this section). Other monsters overwrite other coordinates. It should be noted that for the data I discuss (one level of embedding), it would have been sufficient to say that 👻$_{EV}$ only overwrites the *Origo* coordinate. It is modelled in the way it is to account for

multiple embedding: the prediction is that the individual and the world argument of evidentials would be shifted together.

In optional-shift languages it may be present or absent. In obligatory-shift languages such as Korean, it is always present.

Assuming the two versions of the formal semantics for evidentials introduced in Chapters 4 and 5, I provide sample derivations for Korean.

Variant 1   Below is the first variant of the semantics for Korean perceptual *te*:

(301) $[\![\text{TE}]\!]^{c,i,g} = \lambda p.\ p(i) \wedge \textsc{perceive}(p)(Origo_c, w_c)$

(302c) provides a derivation for a sentence with *te-under-say* (302a, repeated from 282), using the semantics in (301) and the monster from (299):

(302)   a.   Korean: perceptual *te*

Yenghi-nun [Chelswu-ka   khaley-lul mek-**te**-la-ko   ] malha-yess-ta
Yenghi-TOP [Chelswu-NOM curry-ACC eat-**TE**-DECL-COMP] say-PST-DECL
SHIFTED: 'Yenghi said that, *as she has perceived*, Chelswu ate the curry'

b.   LF: [Yenghi said [👻$_{EV}$ [TE [Chelswu ate the curry]]]]

c. $[\![\ (302a)\ ]\!]^{c,i,g}$
$= [\![\ \text{say}\ ]\!]^{c,i,g}(\lambda i'.\ [\![\ 👻_{EV}[\ \text{TE}\ [\ \text{Ch. ate curry}\ ]\ ]\ ]\!]^{c,i',g})([\![\ \text{Yenghi}\ ]\!]^{c,i,g})$
$= 1$ iff $\forall i'$compatible with what Yenghi said at i,
    $[\![👻_{EV}\ [\ \text{TE}\ [\ \text{Ch. ate curry}\ ]\ ]\ ]\!]^{\langle Author_c, \boldsymbol{Origo_c}, ..., \boldsymbol{w_c}\rangle, i', g}$
$= 1$ iff $\forall i'$compatible with what Yenghi said at i,
    $[\![\text{TE}\ [\ \text{Ch. ate curry}\ ]\ ]\!]^{\langle Author_c, ..., \boldsymbol{Origo_{i'}}, \boldsymbol{w_{i'}}\rangle, i', g}$
$= 1$ iff $\forall i'$compatible with what Yenghi said at i,
    Ch. ate curry at $i' \wedge \boldsymbol{Origo_{i'}}$ perceived in $\boldsymbol{w_{i'}}$ that Ch. ate curry

Variant 2   Below is the second variant of the semantics for Korean perceptual *te*:

(303) $[\![\text{TE}]\!]^{c,i,g} = \lambda p.\ p(i) \wedge \forall \langle x', w'\rangle \in \textsc{epist}_{Origo_c, w_c} : \textsc{perceive}(p)(x', w')$

(304c) provides a derivation for a sentence with *te-under-say* (304a, repeated from 282), using the semantics in (303) and the monster from (299):

(304) a. Korean: perceptual *te*
Yenghi-nun [Chelswu-ka   khaley-lul mek-**te**-la-ko   ] malha-yess-ta
Yenghi-TOP [Chelswu-NOM curry-ACC eat-**TE**-DECL-COMP] say-PST-DECL
SHIFTED: 'Yenghi said that, *as she has perceived*, Chelswu ate the curry'

b. LF: [Yenghi said [👻$_{EV}$ [TE [Chelswu ate the curry]]]]

c. ⟦ (304a) ⟧^{c,i,g}
= ⟦ say ⟧^{c,i,g}($\lambda i'$. ⟦ 👻$_{EV}$[TE [Ch. ate curry]] ⟧$^{c,i',g}$)(⟦ Yenghi ⟧^{c,i,g})
= 1 iff $\forall i'$ compatible with what Yenghi said at i,
    ⟦👻$_{EV}$ [TE [Ch. ate curry]] ⟧$^{\langle Author_c, \boldsymbol{Origo_c}, ..., \boldsymbol{w_c}\rangle, i', g}$
= 1 iff $\forall i'$ compatible with what Yenghi said at i,
    ⟦TE [Ch. ate curry] ⟧$^{\langle Author_c, ..., \boldsymbol{Origo_{i'}}, \boldsymbol{w_{i'}}\rangle, i', g}$
= 1 iff $\forall i'$ compatible with what Yenghi said at i,
    Ch. ate curry at i'
        $\land \forall \langle x', w'\rangle \in$ EPIST$_{\boldsymbol{Origo_{i'}}, \boldsymbol{w_{i'}}}$: x' perceived in w' that Ch. ate curry

7.4.3 Advantages

The operator approach provides similar advantages as when applied to pronominal shift, and helps to explain the similarities between different kinds of shift.

Shift only in attitudes   One property evidential shift and pronominal shift share is that both kinds of shift are confined to attitudinal complements and are not sensitive to the perspectival center introduced by experiencer PPs or across sentence boundary (with regard to evidentials, I discussed it in § 7.3.2 as a point of divergence with supplements; 305b is repeated from 290).

(305) Turkish
babam-la   konuş-tu-m
father-with speak-PST-1SG
'I spoke to my father'.

a. Pronouns:
saat iki-de   gel-eceğ-**im**
time two-LOC come-FUT-**1SG**
(i) NON-SHIFTED:✓'I'm coming at 2';
(ii) SHIFTED: # 'He's coming at 2'.

b. Evidentials:
hastalan-**mış**
get.sick-**IND;PST**
(i) NON-SHIFTED: ✓'He is sick, *I heard*';
(ii) SHIFTED: #'He is sick, *my father heard*'.

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In (305) above, neither the shiftable pronoun nor the evidential can refer to *babamla* 'father' introduced in the previous sentence.

In a similar fashion, evidentials do not shift in an attitudinal construction introduced by means other than attitude predicates:

(306) Turkish

Arkadaş-ım-a   göre, sınav-dan kal-**mış**-ım
friend-1S.POSS-DAT by   exam-ABL   stay-**IND.PST**-1SG

> (i) NON-SHIFTED: ✓'According to my friend, I failed the test' (friend is the source of report)

> (ii) SHIFTED: # 'According to my friend, he heard that I failed the test'

Shift Together   Evidentials exhibit what can be subsumed under *Shift-Together* effects:[96]

(307) Bulgarian
Context: I'm exchanging news with Maria, we're discussing our cohort. I was mostly in touch with Jane and tell Maria that she lives in Japan. She was in touch with Lisa who is in Canada. Later on, Maria's mom joins us. Maria tells her: "Jane lives in Japan and Lisa lives in Canada".
Speaker: direct information about p = 'Jane lives in Japan', hearsay about q = 'Lisa lives in Canada';
Maria: hearsay about p, direct about q

Maria kaza na majka   si   che [Dzhein zhivee-**l**-a   v Yaponia] i   [Lisa
Maria said to mother her that [Jane   live-**IND.PST**-F in Japan] and [Lisa
zhivee-**l**-a   v Kanada]
live-**IND.PST**-F in Canada]

> (i) expected mismatch interpretation: # 'Maria told her mother that, *as she was told*, Jane lives in Japan and—*as I was told*—Lisa lives in Canada'.

> (ii) only the concord interpretation (both non-shifted): The speaker is reporting a speech event (what Maria said) of the form $p \wedge q$.

The complement in (307) consists of two clauses, each one marked with the indirect evidential. The context forces a mismatched interpretation such that the evidential in the first conjunct is anchored to the speaker and the evidential in the second conjunct is anchored to Maria. Something like: *Maria told her mother [that [reportedly$_{MARIA}$ Jane lives in Japan] and [reportedly$_{SPEAKERr}$ Lisa lives in Canada]*. This interpretation is not possible.

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96. A problem for probing the presence such effects with evidentials is that there is only one evidential per clause. I thank Emmanuel Chemla for suggesting looking at coordinated structures.

Attitude predicates Evidential shift is confined to a very particular set of verbs. In Bulgarian, while both 'think' and 'say' license embedded evidentials, only the latter licenses the shifted interpretation. In Korean, an obligatory-shift language, evidentials are only licensed under 'say' (Lim 2010). In Standard Tibetan, another obligatory-shift language, evidentials may occur under 'say' but not e.g. 'know' :

(308)   Tibetan

    a.   Embedding under 'think'
        bkra.shis [kho dge.rgan **red**   ] lab.gi-'dug
        Tashi   [he teacher IND.COP] say-DIR.IPV
        'Tashi$_i$ thinks he$_j$ is a teacher, *and Tashi has indirect evidence for that*.'
                         (adapted from Garrett 2001: 209, ex.4)

    b.   Embedding under 'know'
        *bkra.shis [kho dge.rgan **red**   ] ha.go-gi-yod.red
        Tashi   [he teacher IND.COP] know-DIR.IPV
        Intended: 'Tashi$_i$ knows he$_j$ is a teacher, *and Tashi has indirect evidence for that*.'
                      (adapted from Garrett 2001: 212, ex.10)

According to Garrett (2001: Chapter 5: 207-224), in Standard Tibetan evidentials can be embedded only under verbs of speech and thought, such as 'say', 'think', 'believe' (308a), but not verbs of knowledge ('know'), perception ('see') or emotion/desire ('hope') (308b). He further argues that only these verbs are semantically compatible with evidentiality. But, as he himself notes, all the predicates above are either *say* or ones that take a complementizer *se* derived from 'say' (Garrett 2001: 215).

I hypothesize that it is possible to formulate a restriction in terms of shifting on licit combinations of evidentials and attitude verbs. *Say*-complementizers are known to have a peculiar syntax and induce restrictions on binding that create an illusion of logophoricity; see (Koopman and Sportiche 1989) on Abe (Kwa). So, for instance, it may be the case that the Tibetan *know* does not embed evidentials not because of the semantic incompatibility *per se*, but because the structure of its complement is different and does not allow shifting (or does not license monsters).

The syntactic make-up of attitudinal complements has often been neglected in the literature on evidentiality (see e.g. discussion in Chapter 3). That restriction can be due to complementizers has not been noticed, and now let me turn to pronominal shift.

It is often noted that pronominal indexical shift is licensed almost exclusively under speech verbs. For instance, in Zazaki *vano* 'say' is the only predicate that licenses shift in its complement (Anand 2006). Language after language, a similar picture holds: speech verbs license shift while others not so much. The restriction is not universal. For instance, e.g. in Navajo and Slave the shift is also licensed under 'want/think'.

The restriction can be formulated in a number of ways. A purely syntactic view maintains that speech verbs take structurally larger complements, and that monsters sit high (Sundaresan 2012). This is not implausible, given that monsters are not licensed in TP nominalizations.

However, this claim needs to be tested. For one thing, the syntactic properties of Zazaki *vano* are not discussed, so such a restriction would be speculative at this point.

A purely pragmatic view maintains it that indexical shift refers to a previous speech situation. This is not unreasonable, given that perspective shifting in general is facilitated in situations of a preceding discourse (Harris 2012). However, the pragmatics is expected to be universal, so this view does not account for the observed cross-linguistic variation.

I do not want to make a stand on *the* right way to formulate the preference for speech verbs. First, different factors can be at play at once; e.g. see Sudo (2012) for an explanation that derives some restrictions on shift from the semantics of attitude verbs. Second, more systematic research is needed. To this end, I want to point out the following, previously unnoticed, connection.

In some languages, indexical shift is licensed under a variety of attitude verbs:

(309)   Indexical shift beyond 'say'

  1. **Uyghur:** all attitude verbs that take finite complements
     de- 'say'; *sözle-* 'speak, talk'; *maxtan-* 'brag'; *qayil qil-* 'persuade, convince'; *aghrin-* 'complain'; *wede qal-* 'promise'; *bil-* 'believe, know'; *oyla-* 'think'; *ansir-* 'worry'; *ümid qil-* 'hope'; *xejal qil-* 'dream'; *angla-* 'hear'; *oqu-* 'read'.

                                                                     (Sudo 2012: 19.2, 229-233)

  2. **Tsez:** at least the following verbs
     'see', and its derivative 'see in a dream'; 'explain'; 'believe'; 'say'; 'tell', and its derivative *heresi* 'lie'; 'request, ask'; 'hope'; 'apologize'; 'be forgiven'; 'promise'; 'think'; 'brag, lie'; 'worry'; 'be forgotten/forget'; 'hear'; 'read'; 'complain'.

                                                                      (Polinsky 2015: 17, ex.35)

In Uyghur, only *de-* 'say' takes bare complements while all other verbs take a finite complement headed by *dep*, a complementizer derived from 'say' (Travis Major, p.c.). This fact is not discussed by Sudo.

In Tsez, finite complements are headed by $=\lambda in$, and indexical shift is only licensed in such complements (as Polinsky notes). $=\lambda in$ is derived from 'say', and this semi-quotative strategy is common across Daghestanian: these particles can be used both in quotations and finite complements.

To sum up, complementizers seem to play a role in licensing various kinds of shift. This would fall out nicely under the decompositional approach to the semantics of attitude verbs that places meaning in the complement(izer), advanced by Kratzer (2013); Moulton (2009); see 3.4.2.2 for discussion. I leave testing this hypothesis for future research.

7.4.4   Monster galore

One might righteously wonder: why not just say that Origo is shifted by the same operator that shifts the author coordinate? In other words, why multiply monsters?

No dependencies between different kinds of shift   First, not all indexical-shifting languages are also evidential-shifting languages, and this is also true in the other direction. Second, the shifting behavior of evidentials and indexicals in languages where both shift (Korean, Turkish) is not uniform. For instance, in Korean evidential shift is obligatory while pronominal shift is optional.

Furthermore, there is no interaction between evidential and pronominal shift, which would be expected were both shifts due to the same monster. Despite the obligatory shift of *te*, an attitude complement with *te* licenses both non-shifted and shifted of the first person pronoun (pronominal shift is triggered by 👻$_{PER}$, [Park 2014](#)):

(310)   Korean

Yenghi-nun [John-i   **na-lul** po-**te**-la-ko   ] malha-yess-ta
Yenghi-TOP [John-NOM **I-ACC**   see-**DIR**-DECL-COMP] say-PST-DECL

    a. non-shifted (not expected): 'Yenghi said that, *as she perceived*, John saw me (speaker)'
        LF: [Yenghi said [👻$_{EV}$ [TE [John saw me]]]]

    b. shifted (expected): 'Yenghi$_i$ said that, *as she perceived*, John saw her$_i$ (Yenghi)'
        LF: [Yenghi said [👻$_{EV}$ [👻$_{PER}$ [TE [John saw me]]]]]

If the evidential were anchored to AUTHOR(*c*), *I* would be expected to obligatorily shift whenever the evidential shifts. Given that this expectation is not borne out, I conclude that different monsters trigger different kinds of shift. Below are derivations for each of the readings. I only use the first variant of the semantics for *te*, given in (301), as both variants work the same way with respect to shifting.

(311) $[\![$ (310a) $]\!]^{c,i,g}$
    $= [\![$ Yenghi said [👻$_{EV}$ [TE [John saw me]]] $]\!]^{c,i,g}$
    $= [\![$ say $]\!]^{c,i,g}(\lambda i'. [\![$ 👻$_{EV}$ [TE [J. saw me]] $]\!]^{c,i',g})([\![$ Yenghi $]\!]^{c,i,g})$
    $= 1$ iff $\forall i'$compatible with what Yenghi said at i,
       $[\![$👻$_{EV}$ [TE [J. saw me]] $]\!]^{\langle A_c, \boldsymbol{Origo_c},...,w_c\rangle,i',g}$
    $= 1$ iff $\forall i'$compatible with what Yenghi said at i,
       $[\![$TE [J. saw me] $]\!]^{\langle A_c, \boldsymbol{Origo_{i'}},...,w_{i'}\rangle,i',g}$
    $= 1$ iff $\forall i'$compatible with what Yenghi said at i,
       J. saw AUTHOR(c) at $i' \wedge \boldsymbol{Origo_{i'}}$ perceived in $\boldsymbol{w_{i'}}$ that J. saw AUTHOR(c)

In (31), 👻$_{EV}$ does not affect the coordinate that the personal indexical refers to, which results in a non-shifted interpretation. To derive the shifted reading, another monster is needed:

(312) $[\![$ 👻$_{PER}\ \phi\ ]\!]^{\langle Author_c, Hearer_c, Origo_c,...,w_c\rangle,i,g} = [\![\phi]\!]^{\langle Author_i, Hearer_i, Origo_c,...,w_c\rangle,i,g}$ ([Park 2014](#))

(313) is a derivation for (310b):

(313) ⟦ (310b) ⟧^{c,i,g}

= ⟦ Yenghi said [👻$_{EV}$ [👻$_{per}$ [TE [John saw me]]]] ⟧^{c,i,g}

= ⟦ say ⟧^{c,i,g}($\lambda i'$. ⟦ 👻$_{EV}$ [👻$_{per}$ [TE [J. saw me]]] ⟧$^{c,i',g}$)(⟦ Yenghi ⟧^{c,i,g})

= 1 iff ∀i'compatible with what Yenghi said at i,

⟦👻$_{EV}$[👻$_{per}$ [TE [J. saw me]]] ⟧$^{⟨Author_c,Origo_c,…,w_c⟩,i',g}$

= 1 iff ∀i'compatible with what Yenghi said at i,

⟦👻$_{per}$ [TE [J. saw me]] ⟧$^{⟨Author_c,Origo_{i'},…,w_{i'}⟩,i',g}$

= ∀i'compatible with what Yenghi said at i,

⟦TE [J. saw me] ⟧$^{⟨Author_{i'},Origo_{i'},…,w_{i'}⟩,i',g}$

= 1 iff ∀i'compatible with what Yenghi said at i,

J. saw AUTHOR(i') at i' ∧ $Origo_{i'}$ perceived in $w_{i'}$ that J. saw AUTHOR(i')

In (33), both the evidential and the personal monsters are present, which results in the origo shift and in the *I*-shift.

Non-uniformity of indexicals Finally, indexical pronouns do not form a homogeneous class. Therefore, it is not surprising that evidentials do not pattern together with other indexicals.

In particular, the behavior of personal and adverbial indexicals is not uniform. One the one hand, these two types of indexicals may pattern differently with respect to Shift-Together. In this section I discuss Korean, and similar data from Nez Perce (Deal 2014) are presented in Appendix F.

In Korean (Park 2014), indexical pronouns only exhibit *Shift-Together* within one group: *I* plus *you*, *here* plus *now*, as in (314), but not across groups. Consider examples below.

(314) Korean: Shift-Together within classes
Context: John and Mary are having a conversation. John says:

tom-i   sue-eykey [**nay-ka ne-lul**   cohanta-ko] malhayssta
Tom-NOM Sue-to   [**I**-NOM **you**-ACC like-COMP] said
'Tom said to Sue that I (John, Tom) like you (Mary, Sue). '

(i)   none shifts: ✓'I' = actual speaker, John, 'you' = actual addressee, Mary

(ii)   both shift: ✓'I' = Tom, 'you' = Sue

(iii) 1st person shifts: # 'I' = Tom, 'you' = actual addressee, Mary

(iv)   2nd person shifts: # 'I' = actual speaker, John, 'you' = Sue

(Park 2014: 3, ex.5)

Unlike in Zazaki in (see (330) in Appendix F), *I* plus *here* is four-way ambiguous in Korean:

(315) Korean: no Shift-Together across classes
Context: John and Mary are having a conversation in Seoul. John says:
Wuli-ka New York-ey kass-ul ttay, Tom-i [**nay-ka yeki-eyse** thayenassta-ko]
we-NOM New York-to went-when, Tom-NOM [**I**-NOM **here**-at be.born-COMP]
malhayssta.
said
'When we went to New York, Tom said that I (John, Tom) was born here (Seoul, New York).'

(i) none shifts: ✓'I' = SPEAKER, John, 'here' = LOCATION, Seoul

(ii) both shift: ✓'I' = Tom, 'here' = New York

(iii) adverbial shifts: ✓'I' = SPEAKER, John, 'here' = New York

(iv) pronoun shifts: ✓'I' = Tom, 'here' = LOCATION, Seoul   (Park 2014)

The solution proposed by Deal and Park is to have separate monsters for personal coordinates and for adverbial coordinates. This guarantees Shift-Together in (314) but does not ban mismatched interpretations in (315).

On the other hand, personal and adverbial indexicals do not pattern together in Free Indirect Discourse, narrative style that shares features of both direct and indirect discourse and where, using Eckardt's (2014) metaphor, two voices are heard: that of the narrator and that of the protagonist. Personal indexicals (and tense) have to stay faithful to the original context of utterance, and refer to the narrator. Adverbial indexicals (and a plethora of other phenomena) shift and refer to the main protagonist's whereabouts:

(316) Indexicals in Free Indirect discourse

a. English: personal and adverbial indexical
John looked at **my** picture. Yes, he **thought**$_{NARRATOR}$, he **wanted**$_{NARRATOR}$ to marry
me$_{NARRATOR}$ **today**$_{JOHN}$.   (Sharvit 2008: ex.4)

b. German: adverbial indexical
Tom   **lächelte**$_{NARRATOR}$. **Morgen**$_{protagonist}$ **war**$_{NARRATOR}$ der   grosse
Tom.NOM smile.PST   tomorrrow   be.PST   DEF.M.NOM.SG big
Tag.
day.NOM
'Tom **smiled**$_{NARRATOR}$. **Tomorrow**$_{TOM}$ **was**$_{NARRATOR}$ the grand day.'
          (Eckardt 2014: 75, ex.25)

A common solution is bi-contextualism: splitting the notion of context into *context of speech* and *context of thought*. While in the ordinary discourse the two coincide, in FID they are different, so we observe the discrepancies in the behavior of indexicals (Schlenker 2004; Sharvit 2008; Eckardt 2014).[97]

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97. Maier (2015b) argues that all indexicals may shift in FID and advocates a quotational analysis.

7.4.5 Recap

This section offers a formal account of evidential shift. I adopt a strictly contextualist analysis wherein Origo is an indexical that can be sometimes shifted. The shift is driven by a dedicated context-overwriting operator 👻$_{EV}$ that is present in the lexicon of some languages.

This analysis is embedded in a broader context of explorations of shifted indexicality. The jury is still out regarding the full range of cross-linguistic constraints associated with it, but the existing data both for pronominal indexicals and for evidentials are better handled by an operator-based analysis.

To further advance the understanding of the mechanisms that cause evidential shift, it will be instrumental to look (A) at cases of multiple embedding and (B) at the shifting in relative clauses. The shifting pattern of pronominal indexicals under more than one attitude predicate serves as another empirical argument for monsters (see Appendix F). However, the relevant data for evidentials involve complicated scenarios, and my consultants found it very hard to evaluate them. My analysis, however, assumes that evidentials would behave like indexicals, which is reflected in the fact that 👻$_{EV}$ shifts the world coordinate in addition to the individual coordinate.

As for relative clauses, these environments are known to differ from attitude reports with respect to e.g. tense: even in SOT languages, tense is interpreted at face value in relative clauses (such facts have motivated Schlenker (1999) to treat tense as an indexical that only shifts in some languages and even there cannot shift in non-attitudinal environments). If monsters are only licensed under certain attitude predicates that vary across languages, my analysis predicts that evidentials would not shift in relative clauses.

7.5 General discussion

The goal of this chapter was to tackle evidential shift in attitudes. The cross-linguistic variation in the availability of shifted readings has been previously regarded as supporting the dichotomy view on evidentiality. I have shown in Part I that the dichotomy view is not justified empirically because the variation is not uni-dimensional, which undermines the idea of having one underlying semantic distinction that would explain it. Furthermore, I have shown that the existing theories of evidentiality fail to predict the readings in attitudes.

Languages fall into three classes with respect to evidentials-in-attitudes: no shift, optional shift, and obligatory shift. This emerging typology resembles the typology of indexical shift, which is one of the points of departure of the analysis I propose. I argue that shifted evidentiality is a variety of shifted indexicality, thus reducing a case of the apparent semantic variation in evidentials to variation in the lexicon. While there is little empirical support for the semantic non-uniformity of evidentials, *some* machinery to account for pronominal indexical shift is required independently. Additionally, both types of shift are subject to similar constraints, such as shift only in attitudes or limitations on the types of attitude predicates that license it. The versatility of operator-based approaches makes it easy to parameterize these constraints while maintaining a unified analysis.

The analysis I advocate for evidential shift fits squarely into the larger picture defended in the dissertation. Based on the the lack of third-party assessment in dialogues (Chapter 4) and attitude reports (Chapter 5), I have argued that evidentials are obligatorily first-person. And based on the type of context-sensitivity they exhibit, I argue that evidentials have an indexical component. The behavior of evidentials in (dis)agreement and retraction scenarios (Chapter 6) highlights the divide within subjective expressions. Evidentials, just like pronominal indexicals, are always anchored to the actual utterer. The knower associated with epistemic modals, on the other hand, does not have to be the speaker or a group that includes the speaker. This discrepancy between evidentials and epistemics is one more reason not to adapt mechanisms of modal shift for evidentials. While not impossible technically, such a move would not be fine-grained enough to distinguish between otherwise different semantic categories.

Shifting patterns of different expressions and constraints associated with them raise the question on the place of evidentials among other perspective-sensitive phenomena and on the homogeneity of this class. Based on the data from attitudes, I have shown that in many ways evidentials differ from supplements and from epistemics. The next chapter returns to these issues with data from matrix questions and the overall outlook on perspective-sensitivity.

Appendix F: An excursus into shifted indexicality

Schlenker's (1999; 2003) programmatic work has generated a lot of cross-linguistic research on indexical shift. This Appendix presents an overview of different theories that aim at explaining the phenomenon. I will show that analyses that have a syntactic component fare best with respect to various restrictions associated with indexical shift, which in turns has an impact on my framework of choice.

The pattern

Below are examples of pronominal indexical shift from a Daghestanian language Tsez that shifts indexicals optionally and from a Turkic language Uyghur that shifts them obligatorily (Uyghur uses a a different pronominal strategy to express reference to the speaker in embedded clauses):

(317)   Optional shift: Tsez (Nakh-Daghestanian)
Irbaħin-ä   [**di**   ʕayibiyaw   yoł=ƛin   ] eƛi-x
Ibrahim.ERG [**I.ABS** wrong/foolish be.PRS-QUOT] say-PRS

   (i)   NON-SHIFTED: ✓'Ibrahim says that I {the speaker} am wrong'.

   (ii) SHIFTED: ✓'Ibrahim says that he {Ibrahim} is wrong'.

(Polinsky 2015: 14, ex.27)

(318)   Obligatory shift: Uyghur (Turkic)
Ahmet [**män** kʷat-tim   ] di-di
Ahmet [**I**   leave-1SG.PST] say-PST.3

   (i)   NON-SHIFTED: #'Ahmet said that I {the speaker} left'.

   (ii) SHIFTED: ✓'Ahmet said that he {Ahmet} left'.

(Shklovsky and Sudo 2014: 386, ex.12a)

The availability of cross-clausal dependencies ensures that (317) and (318) are cases of genuine embedding.

(319)   Tsez: Indexical shift over question
Irbaħin-ä   [dä-r šebi   r-iy-x-ānu=ƛin   ] eƛ-ä
Ibrahim-ERG [I-LAT what.ABS.IV IV-know-PRS-NEG-QUOT] say-DIR.PST.Q

   (i)   NON-SHIFTED: 'What did Ibrahim say that I {the speaker} did not know?'

   (ii) SHIFTED: 'What did Ibrahim say that he {Ibrahim} did not know?'

(Polinsky 2015: 23, ex.53)

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Daghestanian languages are *wh*-in-situ, so there is no overt extraction in (319). But the interpretation signals that (319) is a genuine question calling for an answer, which would have been impossible with quotation.

In Uyghur, *hichkim*, a negative concord item, needs to be licensed by negation, hence the contrast between (320a) and (320b):

(320)   Uyghur: Negative Concord Licensing

    a.   Root clause with negation
        men   hichkim-ni   kör-**mi**-dim
        I.NOM nobody-ACC see-**NEG**-PST.1SG
        'I saw nobody.'

    b.   Root clause without negation
        *men hichkim-ni   kör-di-m
        I.NOM nobody-ACC see-PST.1SG
        Intended: 'I saw nobody.'   (adapted from Sudo 2012: 205, ex.609)

(321ii) demonstrates that *hichkim* can be licensed in the presence of indexical shift by negation in the higher clause:

(321)   Uyghur: Indexical shift over negative concord
        Tursun   [men   hichkim-ni   kör-di-m   ] di-mi-di
        Tursun.NOM [I.NOM nobody-ACC see-PST-1SG] say-NEG-PST.3

    (i)   NON-SHIFTED: # 'Tursun said that I {the speaker} saw anybody'.

    (ii) SHIFTED: ✓'Tursun didn't say that he {Tursun} saw anybody.'
                                        (Sudo 2012: 205, ex.610)//

If (321) were quotation, the sentence would be ungrammatical, since there is no local negation to license it. Impossibility of (321i) shows that the shift is obligatory.

(322, repeated from 292) outlines the typology of languages vis-a-vis the shift of indexical pronouns:

(322)   A.   **No pronominal shift:** English; French; Russian; . . .

    B.   **Optional pronominal shift:** Aghem (Bantu), Amharic (Semitic) (Schlenker 1999, 2003, secondhand data from (Hyman 1979) and (Leslau 1995)); Japanese (Sudo 2012); Korean (Park 2014); Kurmanji (Iranian; Koev 2013); Mishar Tatar (Turkic; Podobryaev 2014), Navajo (Athabaskan; Speas 1999); Nez Perce (Sahaptian; Deal 2014); Slave (Northern Athapaskan; Rice 1986); Tamil (Dravidian; Sundaresan 2012); Tsez (Nakh-Daghestanian; Polinsky 2015); Turkish (Turkic; Gültekin Şener

and Şener 2011; Özyildiz 2013); Zazaki (Iranian; Anand and Nevins 2004; Anand 2006)

    C. **Obligatory pronominal shift:** Balkar (Turkic; Koval 2014); Matses (Panoan; Munro et al. 2012); Uyghur (Turkic; Shklovsky and Sudo 2014; Sudo 2012)

Approaches

Below I briefly describe major families of approaches to indexical shift (the grouping is mine, and I imagine that respective authors may not endorse this view).

Binding approaches   For Schlenker (1999, 2003) and von Stechow (2002) (modulo differences in the formal implementation), the locus of cross-linguistic variation lies in the binding conditions on pronouns.[98] In English embedded clauses, *I* has to refer to the matrix level. In contrast, the Amharic *I*, the first shiftable indexical discussed in the formal literature, may be bound locally. Local binding in turn results in shifting to the author of the reported context.

In Schlenker's version of the system, indexicals have a Kaplanian semantics in that they are strictly context-dependent and are not affected by intensional quantification. To account for the shift of Amharic indexicals, a new semantics for attitude verbs is introduced.

Attitude verbs quantify over contexts rather than worlds (cf. a similar version in in (243) that I adopt). Then, any attitude report creates two contexts that context-dependent elements can potentially refer to: (i) the matrix context that describes the actual utterance situation, $c*$, and (ii) the embedded context that describes the reported situation.

Attitude predicates have a uniform semantics across languages, but the pronouns differ.[99] Below is a schematized version:

(323) A. **No pronominal shift:** $[\![\text{ I }]\!] = \textsc{author}(c*)$

    B. **Optional pronominal shift:** $[\![\text{ I }]\!] = \textsc{author}(k)$, k is a context variable that can be bound locally and non-locally

    C. **Obligatory pronominal shift:** $[\![\text{ I }]\!] = \textsc{author}(k)$, k is a context variable that has to be bound locally

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98. Schlenker aims to capture indexicality across domains, which includes not only pronominal indexicals, but also tense. While I generally will not be discussing tense and comparative advantages of treating it as indexical, I will show that pronominal shift is restricted across languages in a way temporal embedding is not.

99. Jesse Harris, p.c., suggests that a reverse version of this system would be to place variation in the predicates. I am not familiar with such an implementation but it could be done. Then, the English *say* would quantify over worlds and the Amharic *say* would have two lexical entries, one that quantifies over worlds and another over contexts. Presumably, to achieve obligatory shifting additional assumptions about local binding would be needed.

Operator-based approaches An alternative analysis (Anand and Nevins 2004; Anand 2006; Shklovsky and Sudo 2014; Sudo 2012) maintains a uniform semantics for attitude predicates, as quantifiers over objects more fine-grained than worlds, and also maintains uniform binding conditions on pronouns. The variation is attributed to to the presence or absence of a context-shifting operator 👾, the monster, in the lexicon of a given language. English does not have it while Amharic does, which results in shifting. The monster takes the context parameter of its sister and overwrites it with the index parameter, which is shown in (324, repeated from 297):

(324) $[\![\, 👾\phi \,]\!]^{c,i,g} = [\![\,\phi\,]\!]^{i,i,g}$

Recall the enriched index from (242), repeated below as (325):

(325) $i_k = c^* = \langle author, hearer, \ldots, world\rangle$

This is exactly the juncture where this enrichment becomes important. Given that the index parameter is the one affected by intensional operators (see (243)), indexical elements in ϕ such that it is in the scope of an attitude verb change their reference whenever the monster is present in the same clause. Below is an example of how shifted readings are derived.[100]

(326) pseudo-Amharic

    a. Meaghan thinks that I am a space alien.
        SHIFTED: 'Meaghan thinks that she {Meaghan} is a space alien'.

    b. LF: [Meaghan thinks [👾 [I am a space alien]]

    c. $[\![326a]\!]^{c,i,g}$
        $= [\![\text{ think }]\!]^{c,i,g}(\lambda i'. [\![\, 👾\, [\text{ I am an alien }] \,]\!]^{c,i',g})([\![\text{Meaghan}]\!]^{c,i,g})$
        $= 1$ iff $\forall i'$ compatible with what Meaghan think at i, $[\![\, 👾\, [\text{ I am an alien }] \,]\!]^{c,i',g}$
        $= 1$ iff $\forall i'$ compatible with what Meaghan think at i, $[\![\text{ I am an alien }]\!]^{i',i',g}$
        $= 1$iff $\forall i'$ compatible with what Meaghan think at i, AUTHOR(i') is an alien at i'

The derivation does not differ *much* from the derivation of a non-shifted reading that is present in English, provided in (327, repeated from 244):

(327) a. Meaghan thinks that I am a space alien.

    b. LF: [Meaghan think [I am a space alien]]

    c. $[\![\text{ Meaghan thinks that I am a space alien }]\!]^{c,i,g}$
        $= [\![\text{ thinks }]\!]^{c,i,g} (\lambda i''.[\![\text{ I am a space alien }]\!]^{c,i'',g}) ([\![\text{ Meaghan }]\!]^{c,i,g})$
        $= 1$ iff $\forall i'$ compatible with what M. thinks at i, $[\![\text{ I am a space alien }]\!]^{c,i',g}$
        $= 1$ iff $\forall i'$ compatible with what M. thinks at i, AUTHOR(c) is a space alien at i'

---

100. I will ignore any potential semantic contribution of the complementizer.

The only difference between (326) and (327) is the presence of a monster, and its effect on the interpretation of indexicals. By re-writing the context parameter of the embedded clause, the monster makes indexicals relative to the index parameter, which is shifted by the attitude predicate. As a result, indexicals in the scope of the monster are no longer dependent on the matrix context. In other words, they shift.

The difference between (Anand and Nevins 2004; Anand 2006) on the one hand and (Shklovsky and Sudo 2014; Sudo 2012) on the other is the nature of monstrous operators. In the former type of approach, it is a semantic operator that takes the clause in its scope. In the later type of approach, the operator has a dedicated position in the syntax. I will come back to this issue below.

Pragmatic approaches Yet another view on indexical shift does not appeal to any specialties in the semantics of attitude verbs and enriched intensional quantification. Instead, the shift is argued to be an instance of general pragmatic mechanisms.

A purely quotational analysis of indexical shift has been refuted because the embedded clause is transparent for syntactic operations. That much is clear for all languages in question. An alternative is to treat indexical shift as an instance of mixed, or partial, quotation. Such quotations are verbatim reports of fragments of someone's speech embedded into a regular indirect discourse; see (Maier 2014a) and references therein for discussion of the phenomenon. Consider examples below:

(328)   Mixed quotation

   a.   Asked if he thought climate change wasn't real, Cruz responded that the "data and facts don't support it".[101]

   b.   The former Hewlett-Packard C.E.O. Carly Fiorina said that Obama's persistent linking of gun violence with guns was "sad but not surprising, from a man who believes that people's health can be improved by access to health care".[102]

Quotation marks (328) indicate which parts of Cruz' (328a) and Fiorina's speech 328b) are quoted. Analyzing indexical shift as mixed quotation (Maier 2007) means that shifted indexicals are simply regarded as verbatim chunks of some previous discourse:

(329)   pseudo-Amharic, shifted reading
        Meaghan thinks that "I" am a space alien.

In a similar vein, dynamic approaches to indexical shift treat it as perspectival re-centering (Bittner 2007, 2012; Koev 2013; Roberts 2015b). I will not go into technical details here, but the key idea is as follows.

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101. From *National Observer*; http://goo.gl/BA6x4R.
102. From New Yorker; http://goo.gl/TAq0iS.

In Bittner's framework, *Update with Centering, UC* ([Bittner 2007](), [2011]()), different pieces of information are ranked according to their discourse prominence (recall the discussion of questions-under-discussion and discourse relevance in [§ 4.2]()). There are (i) *topical*, or *central*, entities (individuals, events, propositions, …) and (ii) *backgrounded* entities. Indexicality is viewed as a variety of discourse reference. Empirical arguments come in particular from Kalaallisut (Eskimo-Aleut), whose inflection system is sensitive to discourse salience and distinguishes between topical and backgrounded for third person. First and second person, on the other hand, are obligatorily marked as salient. To achieve it, indexicals are analyzed as being anchored to the utterance event, which is always central.

When it comes to embedding, sometimes the information conveyed by complement may be more salient than the very fact of attitude or speech report; cf. [Simons]()'s ([2007]()) discussion of complements sometimes serving as the main point of an utterance. Speaking formally, complements of attitude verbs may introduce topical events. Consequently, indexical pronouns have an option of referring to such events. In this system, shifted indexicals indicate that their referents are salient in the current discourse.

Restrictions

Evidently, the approaches above differ along several dimensions. This section discussed constraints on indexical shift across languages and how different views account for them.

Shift Together Sentences with multiple indexicals bring to light dependencies between shiftable elements. In most indexical-shifting languages, indexicals within some syntactic domain or of the same semantic type either all shift or none shifts. This property was first discovered for Zazaki ([Anand and Nevins 2004]()), which exhibits global *Shift-Together* effects:

(330) Zazaki: Shift-Together:
Context: Hesen returns to Diyarbekir with his young son Ali.

waxto	kε	e	Diyarbekir-de	bime,	Heseni	Ali-ra	va	[	kε	t$_i$	**ita**	ame
when	that	they	D.-at	were,	Hesen.OBL	Ali-at	said	[	that	you	here	came

dina]
world]

'When they were in Diyarbekir, Hesen told Ali, you {HEARER, Ali} were born here {LOCATION, Diyarbekir}.'

(i) NOTHING SHIFTS: ✓you=HEARER, here=LOCATION

(ii) BOTH SHIFT: ✓you=Ali, here=Diyarbekir

(iii) ONLY ADVERBIAL SHIFTS: #you=HEARER, here=Diyarbekir

(iv) ONLY PRONOUN SHIFTS: #you=Ali, here=LOCATION

([Anand 2006](): 99, ex.294)

Clause-mate indexicals, both personal (*I, you*) and adverbial (*here, now*), have to refer to the same "domain" (however we decide to formalize it, context, event, or something else):

Table 7.1: Global Shift-Together

	here=LOCATION(c*)	here=LOCATION(c')=Diyarbekir
you=HEARER(c*)	✓	☺
you=HEARER(c')=Ali	☺	✓

Binding and pragmatic approaches, in their current form, predict a four-way ambiguity given that the reference of shiftable indexicals is computed independently. One solution is to treat indexical shift as changing perspectives, from that of the speaker to that of the hearer. This is costly on the processor, but once shifted, it is cheaper to stay shifted, as opposed go back to the original perspective (Harris 2012; based on a variety of perspective-sensitive phenomena). Enriched with this pragmatic principle, it is possible to achieve Shift-Together (cf. also Anand's (2006) semantic solution via constraints on binding outlined). However, if the restriction is pragmatic, it is surprising that mismatched interpretations are not just rare, but banned.

Operator approaches, on the other hand, immediately handle the facts in (330). The operator shifts the index, therefore, everything in its scope has to shift. In fact it is Shift-Together effects that served as a primary empirical argument for introducing such operators:

(331) a. none shifts: [...[...you ...here ...]]

       b. both shift: [...[👾 [...Ali ...Diyarbekir ...]]]

Here is a complication. Not all languages obey Shift-Together. For instance, Catalan Sign language does not (Quer 2005). Uyghur and Japanese exhibit only local Shift-Together within a DP, and not within clause (Sudo 2012). Korean (Park 2014) and Nez Perce (Deal 2014) allow personal and adverbial indexicals to refer to different contexts, unlike Zazaki. But if there is more than one indexical of each type, then they obey Shift-Together.

At first glance, this serves as an argument against operators, or at least against a unified account of indexical shift. However, operator-based theories are flexible to enough to accommodate cross-linguistic differences. Once monsters are represented in the syntax, on which see below, it is possible to locate them in different places in different languages and thus resolve the complication.

Multiple embedding (no intervening binder)   This property is closely related to the previous one. In sentences with more than one level of embedding, the presence of a shifted indexical in the intermediate clause constrains the interpretation of indexicals downstairs, as shown in (332):

(332) Zazaki: multiple embedding
Andrew: Ali **mɨ-ra** va [kɛ Hɛseni **to-ra** [ɛz braye Rojda-o]]
 Ali **me-to** said [that Hesen **you-to** [I brother Rojda-GEN]]

(i) lowest indexical, non-shifted: #'Ali said to me (Andrew) that Hesen said to Andrew that Andrew is Rojda's brother.'

(ii) lowest indexical, shifted, referring to the intermediate context: ✓'Ali said to me (Andrew) that Hesen said to Andrew that Ali is Rojda's brother.'

(iii) lowest indexical, shifted, referring to the most local context: ✓'Ali said to me (Andrew) that Hesen said to Andrew that Hesen is Rojda's brother.'

(Anand and Nevins 2004: ex.32)

The indexical in the upper clause refers to the speaker, Andrew. The indexical in the intermediate clause may refer to the addressee or may shift, i.e. refer to Andrew. Turns out, if the intermediate indexical shifts, the lowest indexical cannot refer to the context of utterance and has to shift, referring either to the middle context or to the most local one.

Again, the operator approaches handle it straightforwardly: once the context is overwritten by a monster, everything in the monster's scope has to shift, whether it is in the same clause or lower in the tree. An explanation of the pattern along the lines of pragmatic dispreference towards mixing perspectives is possible. However, just like with the clause-bound Shift-Together above, it is expected to be a preference rather than a prohibition.

Dependencies between different kinds of shift   Nez Perce (Sahaptian) is an indexical-shifting language where both personal and locative indexicals optionally shift:

(333) Nez Perce: personal and locative shift
Talmaks-pa pro_{subj} hi-pe-hi-n-e   [pro_{subj} weet'u **kíne** Ø-wisiinu'
Talmaks-LOC pro 3S-S.PL-say-PRF-REM.PST [pro not   **here 1s**-be.PROSP.PL
kii   k'ay'x-pa]
this week-LOC
SHIFTED: 'They said at Talmaks they (lit. *we*) won't be at Talmaks (lit. *here*) this week.'
(Deal 2014: ex.23)

Locative indexicals cannot shift on their own: this type of shift is conditioned upon the presence of a shifted personal indexical:

(334) Nez Perce: locative shift without personal shift
Context: Harold is in Clarkston. I and my consultant are in Lapwai.
#pay's harold hi-neki-se-Ø   [pro_{subj} Ø-wees   **kíne** clarkston-pa   ]
maybe Harold 3S-think-IPV-PRES [pro **1s**-be.PRES **here** Clarkston-LOC]
Intended: 'Maybe Harold thinks that I (the speaker) am there (lit. *here*) in Clarkson'.
(Deal 2014: ex.27)

At the same time, a reverse situation is possible: personal indexicals may shift in the presence of a non-shifted locative indexical:

(335) Nez Perce: personal shift without locative shift
       Context: my friend is calling me on his cellphone and describing his location. He is trying to make it to Lapwai, but he is lost.
       pro_{subj} hi-hi-ce-∅   [pro_{subj} **kíne** ∅-paay-ca-∅   ]
       pro   3S-say-IPV-PRES [*pro*   **here** 1S-arrive-IPV-PRES]
       shifted: 'He says he (lit. *I*) is arriving here (=actual location), but he is not arriving here (=actual location).'   (Deal 2014: ex.25)

Below is a summary of the Nez Perce pattern:

Table 7.2: Selective indexical shift in Nez Perce

	Locative shift	No locative shift
Personal shift	✓	✓
No personal shift	☹	✓

(adapted from Deal 2014: ex.22)

Deal (2014) captures the conditions on indexical shift outlined above in the following fashion. First, personal and locative shift are due to two separate operators, OP_{PER} and OP_{LOC} respectively. Second, said operators are subject to selectional requirements: the locative monster selects for the personal operator and thus cannot appear on its own:

(336) 1. **No shift:** ✓[$_{CP}$ … [$_{CP}$…]]

       2. **Only personal shift:** ✓[$_{CP}$ … [OP_{PER} [$_{CP}$…]]]

       3. **Only locative shift:** syntactically ill-formed [$_{CP}$ … [OP_{LOC} [$_{CP}$…]]]

       4. **Both personal and locative shift:** ✓[$_{CP}$ … [OP_{LOC} [OP_{PER} [$_{CP}$…]]]]

At the same time, there is no such neat explanation for the facts if the syntax is not involved.

Shift only in attitude reports   Indexicals do not shift across sentence boundary or in the presence of attitudinal constructions such as *according to*:

(337) Japanese
       Mary-niyoruto,   John-ga   watashi-o suki
       Mary-according.to, John-NOM I-ACC   like

    (i)   NON-SHIFTED: ✓'According to Mary, John likes me (the speaker)'

    (ii)   SHIFTED: # 'According to Mary, John likes her (Mary)'   (Yasutada Sudo, p.c.)

This fact, easily amenable to any analysis that ties the shift to the presence of an attitude predicate, is problematic for pragmatic theories. *According to* forces perspective shift in e.g. epistemic modals and licenses partial quotation:

(338) According to Trump, he had begun to address a group of "orderly and civil Nazis" at a downtown arena when his audience was suddenly set upon by an unruly mob of angry vegans, many menacingly clad in Birkenstocks and sustainable garments.[103]

Pragmatic theories then predict that indexical shift should be likewise possible with *according to,* which introduces prior discourse with an explicit perspective.

No shift in nominalizations   Japanese, Korean, Turkish, Mishar Tatar and Uyghur have productive nominalizations that are frequently used as complements of attitude predicates. There are predicates that can take both finite and nominalized complements without an apparent difference in meaning. But even under the same predicate, indexical shift is only licensed in finite complements in all of the above languages (Sudo (2012) on Japanese and Uyghur; Park (2015) on Korean; Podobryaev (2014) on Mishar; own data on Turkish). The pattern is illustrated with Uyghur below:

(339) Uyghur: finite clause
       Ahmet   [men   ket-ti-m   ] di-di
       Ahmet.NOM [I.NOM leave-PST-1SG] say-PST

    (i)   NON-SHIFTED: #'Ahmet said that I (the speaker) left'.

    (ii)   SHIFTED: ✓'Ahmet said that he (Ahmet) left'.   (Sudo 2012: 203, ex.603b)

(340) Uyghur: nominalization
       Ahmet   [mening kit-ken-lik-im-ni   ] di-di
       Ahmet.NOM [I.GEN   leave-REL-NMLZ-1SG-ACC] say-PST

    (i)   NON-SHIFTED: ✓'Ahmet said that I (the speaker) left'.

    (ii)   SHIFTED: #'Ahmet said that he (Ahmet) left'.   (Sudo 2012: 203, ex.603a)

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103. From *New Yorker*; http://goo.gl/wpTepo.

The contrast between (339) and (340) shows that indexical shift is impossible in nominalizations and obligatory (in Uyghur) in finite clauses.

Pragmatic theories ignore the syntax altogether and do not offer a way to capture the ban. One may speculate that only finite complements introduce events that may be central in the discourse , but that has no independent motivation. The mixed quotation analysis, in particular, has no machinery to explain the contrast. To sum up, I do not see any plausible non ad-hoc solution.

Binding theories and theories where the context-writer is in the semantics do not offer an immediate explanation either. One could argue that only finite complements are of the right semantic type, while nominalizations are not. This would require postulating multiple lexical entries for verbs that take both kinds of arguments, e.g. the Uyghur *say*, but would explain the restriction.

Finally, if monsters have a syntactic representation, an explanation suggests itself. As discussed in § 3.4.1, nominalizations differ in how much verbal structure they preserve. Turkish and Japanese, for example, feature TP-nominalizations (Kornfilt and Whitman 2011). Monsters, then, just sit higher and therefore cannot appear in (some) nominalizations (cf. also Sundaresan's (2012) hypothesis that monsters are as high as speech act projection). But they can appear in those clauses that have enough structural space. Note that such clauses need not be finite (pace Shklovsky and Sudo 2014). For instance, Koval (2014) argues that in Balkar (Turkic), indexical shifting is licensed in CP nominalizations and is banned from TP nominalizations, which is indicative of the monster's relative height.

Structural asymmetry In Uyghur, as in other Turkic languages, morphologically finite (= tensed) complements can have nominative and accusative subjects, while in matrix clauses only nominative is allowed. Only nominative subjects can be shifted (and must be, in fact; 341, repeated from 318), while accusative subjects cannot be (342):

(341) Uyghur: nominative subjects
Ahmet   [men   ket-tim   ] di-di
Ahmet.NOM [you.NOM leave-PST.2SG] say-PST

(i)   non-shifted: # 'Ahmet said that I (the speaker) left'

(ii)   shifted: ✓'Ahmet said that he (Ahmet) left'
(Shklovsky and Sudo 2014: 386, ex.12a)

(342) Uyghur: accusative subjects
Ahmet   [men-i   ket-ti   ] di-di
Ahmet.NOM [you.ACC leave-PST] say-PST

(i)   non-shifted: ✓'Ahmet said that I (the speaker) left'

(ii)   shifted: # 'Ahmet said that he (Ahmet) left'
(Shklovsky and Sudo 2014: 386, ex.12b)

Shklovsky and Sudo ([2014](#)) advocate the following clausal architecture for Uyghur:

(343)   Monstrous partition in Uyghur
$[_{\text{CP}} \ldots [_{\text{CP}} \text{Subj}_{\text{ACC}} [\text{👻} [\textbf{\textit{Subj}}_{\textbf{\textit{NOM}}} \ldots]]]]$

Their proposal has three parts:

(344)   Deriving the accusative-nominative asymmetry

1. The monster has a dedicated position in the syntax: everything above it cannot shift, everything below it has to shift.

2. Accusative subjects are part of the complement.

3. Accusative subjects are higher that nominative subjects.

There is a number of syntactic and semantic arguments that support the claims in (344). I refer the reader to the original paper, and present only minimally sufficient evidence below.

First, accusative subjects can be construed *de dicto,* which indicates that the DP has to be in the scope of the verb at LF:

(345)   Uyghur: *de dicto* reading

Tursun	[tulpar-ni	kel-di	] di-di,	ema	tulpar	yoq.
Tursun.NOM	[winged.horse-ACC	arrive-PST	] say-PST	but	winged.horse	not.exist

'Tursun said that a winged horse arrived, but winged horses do not exist.'

(Shklovsky and Sudo 2014: 392, ex.29)

Second, binding facts indicate that accusative subjects are higher. Reflexive subjects can be bound from the matrix clause only if they bear accusative, but not nominative. Pronominal subjects allow coreference with an element in the matrix clause only if they bear nominative:

(346)   Uyghur: binding a reflexive subject

a. Accusative

Men$_i$	[peqet	öz$_i$-em-ni-la	nan	ye-men	] di-di-m.
I.NOM	[only	REFL-1SG-ACC-only	bread	eat-IMPF.1SG	] say-PST-1SG

'I said that only I eat bread.'

b. Nominative

*$^?$Men$_i$	[peqet	öz$_i$-em-∅-la	nan	ye-men	] di-di-m.
I.NOM	[only	REFL-1SG-ACC-only	bread	eat-IMPF.1SG	] say-PST-1SG

Intended: 'I said that only I eat bread.'   (Shklovsky and Sudo 2014: 391, ex.26)

To sum up, there is a structural asymmetry between two types of embedded subject in Uyghur (cf. the discussion of different types of tensed clauses in Turkish in §3.3.1). Shklovsky and Sudo (2014) use this asymmetry to explain the contrast in indexical shifting, and to locate the monster in the structure. This proposal has further empirical support from the shifting behavior of other elements, e.g. everything to the left of an accusative subject has to be non-shifted, as it is above the monster.

In other words, syntactic facts receive a syntactic explanation. It would be hard to reformulate it within theories that do not talk about the structure or those that attribute all shifting to the predicate itself.

Discussion

Indexical shift across languages is subject to a variety of constraints. In many languages, multiple indexicals within one sentence tend to refer to one domain. In some languages, the constraint takes a global form: all clause-mate indexicals take their value from the same context. In some others, the constraint is limited to indexicals of one type. In some others, the domain is local. Generally, these facts are easily amenable to an operator analysis. With some effort and additional asssumptions, they can be handled by binding or pragmatic approaches.

The next set of facts is more problematic for approaches that do not pay close attention to syntax. In Nez Perce, locative shift is only possible in the presence of personal shift, but not the other way round. In many languages, indexical shift is banned from nominalizations, even under verbs that otherwise license it in their complements. In Uyghur, there is a structural asymmetry between accusative and nominative subjects of complement clauses. The former are higher in the structure, and only the latter may shift. These facts receive a natural explanation if context-shifters materialize in the syntax. For instance, both the ban on shift in (some; TP) nominalizations and the non-shifting accusative subjects can be explained by appealing to the relative height of monsters in the tree.

So, some semantic facts call for an operator. Some syntactic facts call for a syntacticized ramification of the operator-based approaches. These facts are easily captured with the help of monsters.

Given that there is no clear evidence in support of the idea that monsters behave the same across languages, or that there must be only one monster that shifts the context entirely (though see Sudo 2012: §19, 228-240), there is wiggle room left for variation. For instance, in different languages monsters could be introduced in different syntactic positions, which would explain variation in Shift-Together and general shiftability of different elements; cf. also Gültekin Şener and Şener's (2011) discussion about differences between the closely related Turkish and Uyghur. Monsters could be selected for by different attitude verbs, which would explain why indexical shift is licensed by different predicates. There is a strong tendency to license indexical shift under speech verbs (see §7.4.3), but this behavior is not a universal.

This is not to say that *everything* is due to syntax. The pragmatics of indexical shift is very poorly understood. For instance, it is unknown which conditions favor or block shifted interpretations in optional-shifting languages. Likewise, it is not clear whether shift may have to do with the content of complement clause being the main point of an utterance. However,

syntactic approaches offer an easy way to parameterize the existing variation and to account for constraints already known.

CHAPTER 8

Evidential shift in questions

Abstract: The behavior of evidentials in questions is strikingly uniform across languages. First, evidentials *shift*, namely, they change their perspective from the speaker to the addressee. Second, a logically possible interpretation is not attested, namely, a reading such that evidentials-in-questions remain speaker-oriented. The first property is frequently discussed in the literature and there is a number of competing accounts. The second property is not addressed directly and is usually derived as a side effect. I show that theories hardwiring the shift to the semantics and/or syntax of evidentiality make wrong predictions. I further argue that the inability to be speaker-oriented in ordinary, information-seeking, questions is an intrinsic property of evidentials and that the shift is better understood in pragmatic terms. This approach correctly predicts that evidentials may, after all, be anchored to the speaker in other types of questions, such as quiz questions and biased questions.

8.1 Introduction

This chapter deals with configurations such as in (347):

(347)   And when, **allegedly**, will be the "end of the world"?[104]

    (i)   NON-SHIFTED ≈ 'Given what **I** heard, when the "end of the world" will be?': The speaker requests that the addressee say when the end of the world will be based on what was **alleged to the speaker**.

    (ii)   SHIFTED ≈ 'Given what **you** heard, when the "end of the world" will be?': The speaker requests that the addressee say when the end of the world will be based on what was **alleged to the addressee**.

In what follows, I will call the interpretation in (347i) *non-shifted*, or *speaker-oriented*, and the interpretation in (347ii) *shifted*, or *addressee-oriented*.

I will show that (347i) is not attested across the board. For instance, it is not a felicitous paraphrase of (347). The literature does not discuss that reading. What is often assumed to be a non-shifted interpretation is best called *quotative*, for the reasons discussed in detail in § 2.4.2.

(347ii), on the other hand, is a natural interpretation of sentences similar to (347) in other languages. I will argue that in fact this is the only interpretation available to evidentials in information-seeking questions, provided that evidentials in a given language can be used in interrogatives at all (some languages do not allow evidentials in questions, e.g. Georgian; Korotkova 2012). The shifted reading is attested at least in Bulgarian (South Slavic); Cheyenne (Algonquian; Murray 2010); Cuzco Quechua (Quechuan; Faller 2002); Japanese; Korean (Lim 2010); St'át'imcets (Salish; Matthewson et al. 2007); Tagalog (Austronesian; Schwager 2010); Tibetan (Tibeto-Burman; Garrett 2001); Turkish (Turkic Mericli 2015).

Specifically with English *allegedly*, and possibly other evidential adverbials elsewhere, there is an interpretation (in questions and otherwise) such that the evidential tracks the communal or shared knowledge of some relevant group rather than the addressee's exclusive knowledge. In such a case, the speaker might even be part of the relevant knowledge-bearing group. For such evidentials, the correct formulation would be that evidentials in questions are, at least sometimes, relative to a group of individuals that necessarily includes the addressee. As discussed in Chapter 6, morphological evidentials are always relativized to an individual, rather than a group of people. In this chapter, I will not be concerned with the distinction between "you"-only readings vs. "you+"-readings. The problem at issue is that evidentials-in-questions are never "I"-only, which needs to be explained and which current theories do not address directly.

This fact that evidentials shift in questions is well-known in the literature, and there are two competing families of approaches, which I will dub *indexical* and *universal*.

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104. From http://sr2013.blogspot.de/2011_10_01_archive.html.

The indexical approaches, developed independently by Murray (2010, 2012a) for Cheyenne and Lim (2010, 2011); Lim and Lee (2012) for Korean, capitalize on the observation that pronominal indexicals such as *I* do not shift in questions and treat evidentials as shiftable indexicals that may refer to entities other than the original context of utterance. I will show that this approach over-generates as it predicts, contrary to fact, that *I* would shift in questions in indexical-shifting languages (ones discussed in Chapter 7 and covered in detail in Appendix F).

The universal approaches, developed in various forms by Speas and Tenny (2003); McCready (2007); Bylinina, Sudo, and McCready (2014); Woods (2014), capitalize on the observation that not only evidentials may shift in questions and argue that evidential shift is an instance of a more general mechanism (semantic or syntactic, depending on the particular implementation) that allows perspective-sensitive phenomena to be anchored to the addressee in questions. I will show that this approach over-generates as it predicts, contrary to fact, that *all* perspective-sensitive phenomena would exhibit a uniform behavior across different environments.

I will argue that the shift itself is best accounted for in pragmatic terms and that it is obligatory because the semantics of evidentials is incompatible with non-shifted readings. The argument proceeds in three steps.

First, I discuss the conditions that make the shift possible. Ordinary questions are sincere inquiries for information. By asking a question, the speaker acknowledges that they do not know the answer, and requests the addressee's opinion on the matter. It is thus only natural that overt markers of point of view—broadly construed—have the ability to shift in such environments. It is the pragmatics of questions that makes the addressee available, which was first suggested by Garrett (2001). The spirit of this approach is similar to that of the universal theories. The difference is as follows: by making the shift rooted in pragmatics, I eliminate the empirically unjustified assumption that perspective-sensitive expressions form a homogeneous class from a semantic and/or syntactic point of view.

Second, I argue that it is the semantics of evidentials that is incompatible with non-shifted interpretations. The common denominator of the previous accounts is that the shift is hard-wired to the syntax and/or semantics of evidentials: evidentials are forced to shift. Partly, this has been done to avoid generating quotative readings, which are possible only in some languages and which have been mistaken for genuinely non-shifted readings (see discussion in § 2.4.2). Putting quotative readings aside, I show that the obligatory nature of the shift results from the interaction of the subjectivity of evidentials and the pragmatics of information-seeking questions. A speaker-oriented reading could be possible if Origo were not aware of their own evidence and were making an inquiry about it. This situation is ruled out because evidentials, as argued in Part II, are subjective and Origo has the highest epistemic status regarding their epistemic state. Another situation in which a speaker-oriented reading could be possible is one where Origo would already know the answer. Such a situation is ruled out by the pragmatics of information-seeking questions: if the speaker knows the answer, sincerity conditions associated with the speech act of question are not met. The proposal I advocate makes the following prediction: non-shifted readings should be possible in types of questions with different pragmatic conditions. The prediction is borne out: evidentials can be speaker-oriented in e.g. quiz questions, where the speaker knows the answer, or in biased questions, where the speaker is seeking to confirm their hunch regarding the answer.

Finally, I turn to the ban on indexical shift in questions. Throughout Part II, I have provided ample evidence for the similarities between evidentials and indexicals. In questions, their behavior obviously diverges. As detailed in Appendix F (Chapter 7), indexical shift, which I argue evidential shift in attitudes is a variety of, is subject to syntactic restrictions. It is therefore possible to formulate a constraint that would disallow the mechanism of indexical shift to take place in questions due to the licensing of monsters. As to the pragmatic mechanism outlined above, I argue that only evidentials, but not indexicals, may undergo it. I have argued that evidentials have an indexical component, but their overall semantics is more complex as they deal with epistemic states. This is what allows them to shift in questions in the first place. Indexicals, on the other hand, merely refer to Author of some context, but do not talk about the point of view, which explains why the pragmatic shift does not affect them. Their behavior is in contrast with e.g. egophoric pronouns, which express conscious participation in a situation and which therefore shift in questions.

The chapter is structured as follows. Section §8.2 introduces the core data. Section §8.3 shows that putative counter-examples to generalizations in §8.2 do no constitute counter-examples. Section §8.4 discusses previous approaches to evidential shift in questions. Section §8.5 offers an alternative analysis that derives the shift from the interaction of the semantics of evidentials and the pragmatics of questions. Section §8.6 closes the discussion.

8.2   Empirical landscape

The goal of this section is to establish the empirical landscape of evidentials-in-questions. I will focus on the two puzzles. The first puzzle is as follows: out of the two logically possible interpretations, speaker-oriented and addressee-oriented, only the latter is attested across languages. The second puzzle concerns the behavior of indexical pronouns such as *I*: they never shift in questions.

8.2.1   Evidentials in questions

The phenomenon of evidential shift in questions is illustrated with examples from Bulgarian in (348)–(350). Evidentials typically signal that the speaker requests a reply based on the particular type of evidence the addressee is supposed to have, such as hearsay in (348) and inference in (349).

(348)   Bulgarian: hearsay
        Context: Kathleen and I are hiking. We see fresh animal tracks, which may be dangerous as we are in the bear country. Fortunately we see a ranger, and Kathleen talks to him (in Q'anjob'al, which I don't speak). I then ask her:
        Mečka li e   mina-**l**-a   ottuk?
        bear   Q be.3SG.PRES pass-**IND.PST**-SG.F from.here

        (i)   NON-SHIFTED: #'Given what I heard, did a bear pass here?'

        (ii)   SHIFTED: ✓'Given what you heard, did a bear pass here?'

(349) Bulgarian: inferential
Context: Kathleen and I are hiking. We see fresh animal tracks, which may be dangerous as we are in the bear country. Fortunately Kathleen recently completed a wilderness class and is in a better position to judge. I then ask her:

Mečka li e   mina-**l**-a   ottuk?
bear   Q be.3SG.PRES pass-**IND.PST**-SG.F from.here

(i)   NON-SHIFTED: #'Given what I infer, did a bear pass here?'

(ii)   SHIFTED: ✓'Given what you infer, did a bear pass here?'

(348i) and (349i) show that it is perfectly natural to ask a question such that the speaker expects the addressee to base a reply on particular evidence they have. It is clear that the contexts in these examples do not favor a speaker-oriented reading. However, even in contexts that license such readings it infelicitous for an evidential to be anchored to the speaker, as shown in (350):

(350) Bulgarian: hearsay
Context: Kathleen and I are hiking. We see fresh animal tracks, which may be dangerous as we are in the bear country. Kathleen, who recently completed a wilderness class, withholds her expert opinion and won't tell me what she thinks. Fortunately we see a ranger, and I talks to him. I later forget what I was told and then ask her:

Mečka li e   mina-**l**-a   ottuk?
bear   Q be.3SG.PRES pass-**IND.PST**-SG.F from.here
Intended: NON-SHIFTED: #'Given what I heard, did a bear pass here?'

The situation in Bulgarian is an instance of a robust cross-linguistic pattern (also observed by Murray (2010)). If an evidential can be used in questions at all, it would shift. This pattern is attested in at least the following languages: Bulgarian (South Slavic); Cheyenne (Algonquian; Murray 2010); Cuzco Quechua (Quechuan; Faller 2002); Japanese; Korean (Lim 2010); St'át'imcets (Salish; Matthewson et al. 2007); Tagalog (Austronesian; Schwager 2010); Tibetan (Tibeto-Burman; Garrett 2001); Turkish (Turkic; Mericli 2015).

In some languages, some evidentials cannot be used in questions for independent reasons. For instance, Georgian evidential past exhibits traits of a positive polarity item and is thus banned from questions, conditional antecedents and complements of e.g. 'not think' (Korotkova 2012). In Tibetan, direct *shag* is argued to be banned from questions based on aspectual reasons (Kalsang et al. 2013).

Note that the shift in questions is not correlated with the shift in attitudes. As shown in Chapter 7, Bulgarian is a language where evidentials may be speaker-oriented in attitudes. This fact suggests that the two types of shift are due to distinct mechanisms, an analysis that I will pursue. This is further corroborated by the fact that the obligatory-shift pattern is reproduced in questions in embedded environments, e.g. 'ask' (351):

(351) Bulgarian: embedding under 'ask'

Nataša popita   Stefan [dali   mechka e   mina-**l**-a
Natasha ask.AOR.3SG Stefan [whether bear   be.3SG.PRES pass-**IND.PST**-SG.F
ottuk   ]
from.here]

  (i)   #SPEAKER-ORIENTED: Natasha asked Stefan whether, given what I hear/infer, a bear passed here.

  (ii) #ADDRESSEE-ORIENTED: Natasha asked Stefan whether, given what you hear/infer, a bear passed here.

  (iii) #SUBJECT-ORIENTED (embedded speaker): Natasha asked Stefan whether, given what she hears/infers, a bear passed here.

  (iv) ✓STEFAN-ORIENTED (embedded addressee): Natasha asked Stefan whether, given what he hears/infers, a bear passed here.

In (351), the only available interpretation is the one where the evidential is oriented towards the embedded addressee, Stefan. A similar situation is observed with self-addressed questions under 'wonder', where the subject is simultaneously the asker and the addressee of a question. These facts dovetail nicely with the data from matrix questions. Generally, question embedding poses a lot of puzzles (see (Uegaki 2015) and references therein), and I leave investigating the behavior of evidentials under other question-embedding predicates, such *don't know* or *be sure*, for future research.

8.2.2 Evidentials and indexicals in questions

In chapter 7, I provided ample evidence for treating evidentials on a par with shiftable indexicals. In questions, the two classes behave differently, as pointed out by Murray (2010, 2012a) for Cheyenne and Lim (2010) for Korean. Consider an example from Cheyenne below:

(352) Cheyenne

  a. Declarative
     ná-hó'tėhevá-**mȧse**
     1-win-rpt.1sg
     'I won, I heard.'

  b. Question
     mo=ná-hó'tėhevá-**mȧse**
     y/n=1-win-rpt.1sg
     'Given what you heard, did I win?'   (Murray 2010: 73, ex.3.45)

In declaratives (352a), both *I* and evidential refer to the speaker. In questions (352b), *I* refers to the speaker and evidential origo is the addressee. This is an instance of a robust cross-linguistic pattern:[105]

(353)   NO INDEXICAL SHIFT IN QUESTIONS

       Indexicals do not shift in questions even in indexical-shifting languages.

To recapitulate (see Chapter 7 for a thorough discussion), in some languages personal indexicals such as *I* and adverbial indexicals such as *here* do not have to always be speaker-oriented. When embedded under an attitude predicate, most likely *say* but not only, they may refer to the matrix subject. But even shiftable indexicals are obligatorily speaker-oriented in questions, which is illustrated by the behavior of *I* and *here* in Turkish, an indexical-shifting language (Gültekin Şener and Şener 2011; Özyildiz 2013):

(354)   Turkish: personal indexical
       Context: Natasha and I are talking about kale.

       a.   Attitude report:

          Natasha   [sev-er-**im**   ] di-yor
          Natasha.NOM [like-HAB-**1SG**] say1-PROG

          (i)   NON-SHIFTED: ✓'Natasha says I (speaker) like it.'
          (ii)   SHIFTED: ✓'Natasha says she (Natasha) likes it.'

       b.   Question:

          sev-er   mi-**yim**?
          like-HAB   Y/N-**COP.1SG**

          (i)   NON-SHIFTED: ✓'Do I like it?'
          (ii)   SHIFTED: # 'Do you like it?'

(355)   Turkish: adverbial indexicals
       Context: I am in Paris, Meaghan is in Los Angeles. Meaghan is talking about Jun.

       a.   Attitude report:

          Meaghan [Jun **bura-da**   oku-yor   ] de-di
          Meaghan [Jun **here-LOC** read-PROG] say1-PST

          (i)   NON-SHIFTED, speaker's 'here': ✓'Meaghan said Jun studies here (=Paris).'
          (ii)   SHIFTED, Meaghan's 'here': ✓'Meaghan said Jun studies here (=LA).'

       b.   Question:

          Jun **bura-da**   mi   oku-yor?
          Jun **here-LOC** POL.Q read-PRES.PROG

          (i)   NON-SHIFTED, speaker's 'here': ✓'Does Jun study here (=Paris)?'

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105. Based on personal communication, I believe that this pattern was not unnoticed by the scholars of indexical shift yet it was never fully stated and it is never referred to in the literature on evidentiality.

(ii)   SHIFTED, Meaghan's 'here': # 'Does Jun study here (=LA)?'

(354) and (355) show that Turkish *I* and *here* may shift in attitude reports (354a, 355a) but cannot shift in questions (354b, 355b). The overall behavior of indexicals in questions is thus a puzzle.

One might wonder if shiftable indexicals are at all allowed to have second-person antecedents (some logophors, for instance, can only have third-person antecedents, e.g. in Ewe; Pearson 2015b). If they are not, this would cause the prohibition against shifting to the addressee in questions. However, indexicals may shift if the attitude subject is 'you':[106]

(356)   Turkish
      Sen [nasıl hastalan-dı-**m**   ] de-di-n?
      you [how get.sick-PST-**1SG**] say-PST-2SG

     (i)   NON-SHIFTED: 'How did you say that I got sick?'

     (ii)   SHIFTED: 'How did you say that you got sick?'

(356) demonstrates that shifted indexicals may have second-person antecedents. Therefore, a special explanation is needed for the lack of indexical shift in questions.

8.2.3 Recap

Evidentials and indexicals display a peculiar discrepancy in how they are interpreted in questions. Evidentials are always anchored to the addressee in information-seeking questions (other types of questions are discussed in § 8.5), which means that a logically possible speaker-orientation is not attested. The same pattern holds for complements of 'ask'. Indexicals, on the other hand, are subject to the same constraints as in other root clauses: they refer to the person who utters the sentence. This pattern holds both indexical-shifting languages and for languages like English, where indexicals do not shift in attitudes.

Table 8.1: Indexical pronouns and evidentials in root clauses

	Root declaratives	Questions
Indexical pronouns	Speaker	Speaker
Evidential origo	Speaker	**Addressee**

The next section discusses potential counter-examples to these generalizations.

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106. 'How' in the example below is to show that it is embedding and not quotation: 'how' cannot modify 'say' and quotation would not allow for *wh*-phrases in-situ to have wide scope.

8.3 Putative counter-examples

The universal status of the generalizations presented in § 8.2 has been disputed. It has been argued, for instance, that evidentials do not have to shift in questions, or that indexicals might shift in questions. I discuss why these alleged counter-examples do in fact violate the generalizations that I put forth.

8.3.1 Indexicals that allegedly shift in questions

McCready (2007) suggests that personal indexicals in Japanese may shift in questions, if directed towards a child or someone socially inferior:[107]

(357) Japanese *boku*

    a. **boku-wa** horensoo-ga kirai   desu
        I-TOP   spinach-NOM dislike COP
        'I don't like spinach.'

    b. **boku-wa** horensoo-ga kirai   na   n?
        I-TOP   spinach-NOM dislike COP Q
        'Don't you like spinach?'

<div align="right">(McCready 2007: 435-436, ex.7-8)</div>

I argue that this (357b) is not an instance of indexical shift. This use has very specific pragmatics, unlike indexical shift, and is not restricted to questions, so 'I' is not actually shifted. *Boku* (or even *boku-chan*, with a proper name honorific) is widely used as a second person pronoun when talking to or about male children and has no female counterpart (Ide 1997: 52, Clancy 1985: 454).

    Such second-person *boku* often appears as a vocative or in declaratives (which McCready himself notes), provided that pragmatic conditions are met:

(358) *Context*: Mother speaking to a doctor.
      uchi-no   **boku-wa** hoorensoo-ga taberarenai no
      house-GEN **I**-TOP   spinach-NOM can't eat   PRTCL
      'Our kid cannot eat spinach', literally 'Our I cannot eat spinach', cf. the idiomatic 'We cannot eat spinach'.

In (358), *boku* unmistakenly refers to the child. This phenomenon is reminiscent of the Motherese *we* as in *We slept well tonight* uttered by a mother or some other caregiver, though there is no gender differentiation in English, or Russian and French that do the same thing with *we*. Such uses might have to do with the focus of empathy but, to reiterate, (357b) is not a counter-example to the cross-linguistic prohibition against indexical shift in questions.

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107. Not discussed by McCready, *boku* is neutral when directed towards children but has a derogatory flavor when directed towards adults.

8.3.2 Evidentials that allegedly do not shift in questions

San Roque, Floyd, and Norcliffe (in press)[108] argue that evidentials do not have to switch perspective in questions. I propose that all such cases do not instantiate a genuine speaker-oriented reading in questions that I talk about. While I do not have access to all of the languages discussed by San Roque et al., there are several plausible explanations to their data. Specifically, the following suspects should be ruled out before a claim could be made that evidentials do not shift in information-seeking questions: (i) *quotative* readings, which are discussed in detail in §2.4.3, (ii) *mirative* readings, which express surprise, or (iii) *ignorance* readings of indefinite pronouns that have been misleadingly referred to as *conjectural questions* (Littell et al. 2010).

8.3.2.1 Quotative readings

There is a reading that in the literature has been referred to as *speaker-oriented*. In §2.4.3, I refer to such readings as quotative as they are only possible with a small subset of hearsay evidentials and are best understood as relayed speech acts. Below I repeat the relevant piece of argumentation that shows why it is a not a genuine speaker-oriented reading.

(359, repeated from 65) illustrates the pattern:

(359) Cuzco Quechua
Pi-ta=**s**   Inés-qa   watuku-sqa?
who-ACC=**SI** Inés-TOP visit-PST2

(i)   NON-SHIFTED ≈ '**Given what I heard**, who did Inés visit?' (this interpretation is not discussed in the literature)

(ii) SHIFTED ≈ '**Given what you heard**, who did Inés visit?' (Faller's comment: speaker expects the addressee to base their reply on hearsay)

(iii) QUOTATIVE ≈ '**Someone said**: who did Inés visit?'. (Faller's comment: speaker indicates that somebody else is asking)

(Faller 2002: 230, ex.189b; my translations)

(359i) is a genuine non-shifted reading. (359ii) is, as expected, the shift to the addressee. (359iii) is more peculiar. Faller (2002) and subsequent literature (Murray 2010; Lim 2010) describe it as "anchored to the speaker". While it is true that =*si* in (359iii) is in some way about what the speaker heard and thus is non-shifted, there is an important asymmetry between (359iii) on the one hand and (359i), (359ii) on the other:

— (359i), (359ii) are speech acts of question performed by the speaker and requesting particular actions from the addressee;

— in (359iii), the current speaker is not requesting information from the addressee but merely reports a question made by a third party.

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108. I thank Stephen Wechsler for drawing my attention to this paper.

As discussed in detail in §2.4.3, quotative readings are attested not only with questions, but also with imperatives, and require special pragmatic conditions. Contra the assumption in the literature on evidential shift, nothing special is needed to rule them out, as they will not arise under any standard view on questions. It is in fact problematic to derive them. For instance, there is no clear evidence whether such readings instantiate embedded speech acts or whether evidentials that allow them function as a mechanism of indirect discourse. In what follows, I will not talk about them anymore, because the availability of quotative readings does not violate the generalization that evidentials shift in questions.

8.3.2.2 Surprise readings

It is not uncommon for evidentials to serve as markers of mirativity, linguistic category that encodes surprise (DeLancey 1997, 2001; Peterson 2010b; Peterson forth.; Rett and Murray 2013). Such a use is illustrated by an example from Duna in (360):

(360)   Duna (Trans-New Guinea)
        Jeni   siki   so-**nei**=pe?
        Jenny sickness take/get-**REAS**=Q

   (i)   SHIFTED: 'Has Jenny been sick (do you think)?'
                                                        (San Roque et al. forth.: 19, ex.23a)

   (ii)   MIRATIVE: 'Oh, has Jenny been sick? (I think - I'm surprised)'
                                                        (San Roque et al. forth.: 20, ex.24a)

(360i) is an instance of evidential shift, and (360ii) is an instance of the surprise interpretation. San Roque et al. (in press) argue that such uses of evidentials as in (360ii) are questions.

While I don't have access to Duna, I hypothesize that such readings are exclamatives, and not questions. Exclamatives across the board often have the same superficial make-up as questions (Zanuttini and Portner 2003), e.g. they use *wh*-phrases. However, exclamatives differ from questions semantically (Rett 2011); syntactically, e.g. in not licensing NPIs even when negation is present in the same clause (Delfitto and Fiorin 2014);[109] or prosodically. Exclamations often have a special intonation contour. For instance, Bulgarian evidentials can be used to indicate surprise, but they don't have a question intonation in this interpretation.

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109. Consider the following contrast:

(i)   Italian

   a. *alzare un dito* 'lift a finger' is an NPI
      Il   presidente *(non) ha   **alzato un dito**   per Gianni
      The president   not   has lifted   a   finger for Gianni
      'The president has *(not) lifted a finger for Gianni.'   (Delfitto and Fiorin 2014: 291, ex.29)

   b. *alzare un dito* 'lift a finger' is not licensed in exclamatives
      *Chi non ha   **alzato un dito**   per Gianni!
      who not has lifted   a   finger for Gianni
      'Who has helped Gianni!'   (Delfitto and Fiorin 2014: 292, ex.30b)

Summing up, San Roque et al. (in press) do not show that the surprise interpretation of (360) is a question. It is likely to be an exclamative. If that is the case, such interpretations do not constitute counter-examples to the generalization that evidentials shift in questions.

8.3.2.3 Ignorance readings

Sometimes sentences that contain evidentials and *wh*-words have ignorance readings, translated along the lines of 'I wonder ...' or 'I don't know ...'. The ignorance interpretation has been attributed to the presence of an evidential and has been treated as an instance of speaker's perspective in a special kind of question.

In and of itself, this is not a counter-example to my claim that evidentials shift in information-seeking questions. My analysis, discussed in detail in § 8.5, predicts that evidentials may stay speaker-oriented given the right pragmatic conditions. In this section, however, I want to propose an alternative view on ignorance readings such that they arise independently of evidentials.

I propose that languages with ignorance interpretations are in fact languages with *wh*-indefinites. The argument proceeds in two steps. First, it is cross-linguistically common for indefinite pronouns such as *someone* to express ignorance or indifference on part of the speaker, and some languages even have dedicated pronouns that have this function (Haspelmath 1997). Second, many languages have *wh*-indefinites, pronouns that function both as *wh*-words and as indefinites (Kuroda 1965). In languages without overt question marking (such as e.g. Korean) a declarative sentence with an indefinite (*Someone came*) may be superficially identical to a *wh*-question (*Who came?*). I propose that ignorance readings are due to the presence of a *wh*-indefinite that has ignorance among its other functions.

Based on sentences such as (361) below, Littell, Matthewson, and Peterson (2010) argue that evidentials may be speaker-oriented in questions:

(361)   Gitksan (Tsimshianic)

    a. **naa** 'an-t   gi'nam-(t)=hl xhlaẃsxw 'as   John
        who S.REL-3 give-3=COND shirt   PREP John
        'Who gave this shirt to John?'

    b. **naa=ima**   'an-t   gi'nam-(t)=hl xhlaẃsxw 'as   John
        who=**INFER** S.REL-3 give-3=COND shirt   PREP John
        'I wonder who gave this shirt to John.'   (Littell et al. 2010: 91, ex.7)

(361a) shows that *naa* can be used in *wh*-questions as a *wh*-word. Littell et al. (2010) do not discuss the syntactic make-up of interrogatives in languages they are looking at, but, as evidenced by (361a), there is no question morphology. (361b), on the other hand, is interpreted as a declarative sentence that indicates that the speaker does not know the referent of *naa*. A very similar interpretational ambiguity is attested in at least the following languages: Cheyenne (Murray 2010, 2012b), Cuzco Quechua (Faller 2002), Korean (Lee 2012), Eastern Pomo (McLendon 2003), Thompson Salish and St'át'imcets (Littell et al. 2010), Warlpiri

([Aikhenvald 2004](#)).

[Littell et al.](#) ([2010](#)), and after them [San Roque et al.](#) (in press), dub interpretations as in (361b) *conjectural questions*: self-addressed questions that do not require an answer on part of the interlocutor. Their crucial assumption is that the ignorance effect is created by evidentials. I sketch an alternative proposal below.

It is cross-linguistically common to use indefinite pronouns to indicate speaker's ignorance. In languages like English, this function is covered by *some*-pronouns. For instance, *someone*, in addition to existence, may indicate that the speaker doesn't know or care who the referent is. Some other languages have dedicated indefinite pronouns that indicate speaker's lack of knowledge or interest towards the referent ([Haspelmath 1997](#): 45-48, §3.2.4), e.g. German (*irgend jemand* and *irgend etwas*), Kannada (*oo*-series), Lithuanian (*kaž*-series), and Russian *koe*-pronouns illustrated in (362b):

(362)   Russian (Slavic)

    a. *koe*-series: known to the speaker
        Koe-kto   prišol.
        SPEC.KNOWN-who.NOM came
        'Somebody (I don't want to say who) came.'

    b. *to*-series: unknown to the speaker
        Kto-to   prišol.
        who.NOM-**SPEC.UNKNOWN** came
        'Somebody (I don't know who) came.'

The existence of such pronouns indicates that natural language has a means to talk about ignorance that is not related to evidentiality. I hypothesize that this exactly what it at play in languages like Gitksan: (361b) contains a pronoun that triggers the ignorance interpretation that is translated with the help of *wonder* in English.

[Littell et al.](#) ([2010](#)) claim that sentences such as (361b) must be questions but do not provide language-internal syntactic diagnostics for it, similar to NPI-licensing in English or wh-fronting in Germanic. Their sole argument for (361b) being a question is that the sentence contains a *wh*-word. I propose that such cases instantiate *wh*-indefinites.

In a number of languages, *wh*-words can be used in non-interrogative environments, a property most famously described for Japanese ([Kuroda 1965](#); [Kratzer and Shimoyama 2002](#)). In some other languages, bare *wh*-words can be used in non-interrogative environments:

(363)   Korean
    Yuna-ka   **nwukwu-lul** mann-a
    Yuna-NOM who-ACC   meet-INT

    (i)   'Yuna is seeing someone (I don't know or don't care who).'
    (ii)   'Is Yuna seeing someone (I don't know or don't care who)?'
    (iii) 'Who is Yuna seeing?'   ([Yun 2012](#): 285, ex.1)

The sentence in (363) has several interpretations that are only distinguished by prosodic means. The pronoun can be translated as 'who' or as 'someone', and when it is used as an indefinite, it signals speaker's ignorance. Therefore, ignorance readings of Korean sentences with evidentials are not due to the presence of evidentials (**?**: pace).

(Brown 2015) summarizes non-interrogative uses of Gitksan *wh*-pronouns. In particular, they can have ignorance readings, as in (364):

(364)   Gitksan (Tsimshianic)
        gi'nam'y as   **naa** gi
        give.1SG PREP **who** dist
        'I gave it to someone'.
        Consultant's comment: If you don't remember who you gave it to ...

        (Brown 2015: 7, ex.28)

(364) does not have an evidential, which is in conflict with Littell et al.'s (2010) central claim that ignorance is due to an indirect evidential. Furthermore, scrutiny reveals similar non-interrogative readings of *wh*-pronouns also in St'át'imcets (data from (Davis 2001) and texts (Matthewson 2005)).

In some languages, such as Eastern Pomo (365) and Warlpiri (Aikhenvald (2004); see (193) in Chapter 4), the ignorance effect occurs in the presence of a question particle:

(365)   Eastern Pomo (Pomoan)
        ki.y'a=**t'a** ˀéč-**ink'e**
        who=**Q**   sneeze=**SENS.EV**
        Original translation: 'Who sneezed? (I heard, but don't know who sneezed).'
        My suggested translation: 'Someone (I don't know who) sneezed, I feel'.

        (McLendon 2003: 115, ex.51)

This fact has reinforced the idea that sentences such as (365) are questions. I propose that such cases should be also treated as containing indefinites. An indeterminate pronoun and a question particle are common ingredients for cooking up an indefinite, see (Szabolcsi 2015) and references therein on how to arrive to such semantics compositionally.[110] This strategy is attested in e.g. Japanese (particle *ka*), Sinhala (particle *da*) and Tlingit, illustrated in (366) below:

(366)   Tlingit (NaDene)

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110. To be precise, the second element does not have to be a question particle, it may have other uses such as disjunction or 'whether', as in Japanese, and may only have those other uses, as in Hungarian (Szabolcsi 2015).

a. *Wh*-WORD
   X'oon   keitl **sá** ysiteen?
   how.many dog Q you.saw.them
   'How many dogs did you see?'   (Cable 2006: 111, ex.223)

b. EXISTENTIAL INDEFINITE
   Yéi   uwatee **x'oon**   táakw **sá**.
   thus he.was **how.many** winter Q
   'He lived there for some number (=many) years.'   (Cable 2006: 112, ex.229)

c. SPEAKER IGNORANCE INDEFINITE
   Tle   **x'oon**dahéen   **sá**wé   dzísk'w yax   ayawliják
   then **how.many**.times Q.FOC-PART moose   they.killed
   '*I don't know how many times* they went to kill moose.'
                    (Cable 2006: 60, ex.130b, from Nyman and Leer 1993: 52, line 240)

In contrast with the English translations, in Tlingit the same combination *x'oon + sá* 'how many + Q-particle' covers *wh*-questions (366a) and existential indefinites (366b), as well as other contexts (Cable 2010). Speaker's ignorance function is performed by the same pronoun (366c).

Summing up, in some languages, e.g. Gitksan (361b) and Eastern Pomo (365) sentences that contain a *wh*-word and an evidential receive a speaker's ignorance interpretation.

(Littell et al. 2010; Lee 2012; San Roque et al. in press) argue that such cases as in (361b) and (365) are questions and attribute the ignorance effect to evidentials. I propose that these cases are best analyzed as ignorance readings of *wh*-indefinites. While I do not have data for all languages in question, there is a body of evidence supporting my hypothesis. Korean is a canonical *wh*-indefinite language. Murray (2012b) argues it to be the case for Cheyenne. There are Gitksan examples where the ignorance effect arises without evidentials (Brown 2015). There is also putative evidence for St'át'imcets(date from (Davis 2001) and (Matthewson 2005)) and Warlpiri (Margit Bowler, p.c.).

Littell et al. (2010) further argue that the sentences in question denote sets of propositions. However, this property does not uniquely identify questions, and within Alternative Semantics and Inquisitive Semantics, both interrogatives and sentences with indefinites would receive a similar denotation, which is perfectly compatible with my hypothesis. It would still be interesting to look in detail at the semantic contribution of evidentials in such sentences, for instance, they may help disambiguate between ignorance and existential readings of pronouns. Crucially, evidentials are unlikely to create ignorance readings. Such readings thus do not violate the generalization that evidentials shift in questions.

8.3.3   Recap

The section tackles potential counter-examples to the generalizations stated in section § 8.2.

First, McCready (2007) has argued that sometimes indexical pronouns may shift in questions. I show that this is an instance of a special "caregiver" use of first person pronouns. This use is not unique to questions and is very restricted pragmatically.

Second, several unrelated cases have been argued to instantiate speaker-oriented readings in questions; see (San Roque et al. in press) for an overview. For each of the cases, I propose an alternative explanation.

A. Quotative readings, which are not parallel to shifted and genuine speaker-oriented readings (logically possible, but not attested) are often referred to as speaker-oriented;

B. Mirative uses of evidentials have been argued to be speaker-orientedness in questions due to the superficial similarity between questions and exclamatives;

C. It has also been argued that evidentials-in-questions may indicate the speaker's ignorance. While there is no conclusive syntactic or semantic evidence for treating such sentences as questions, I propose that this interpretation is due to the presence of indefinite pronouns, which are independently known to induce speaker ignorance effects.

To sum up, I conclude that the generalizations stated in section § 8.2 are universal: evidentials shift in questions, and indexical pronouns do not. The next section discusses previous approaches to these data.

8.4 Previous approaches

This section is devoted to previous analyses of evidential shift in questions. As I will show, the main problem of these analyses—despite differences in frameworks—arises from a somewhat single-sided view on context-sensitivity and speaker-relativity.

Context-sensitivity may come in many flavors. For instance, epistemic modals, predicates of personal taste and indexical pronouns are all context-sensitive but their context-sensitivity does not seem to arise from the same source, see a short overview in (Weatherson and Egan 2011). A unifying account that treats all context-sensitive and potentially shiftable elements alike (Speas and Tenny 2003; McCready 2007) inevitably runs into trouble when the elements do not behave the same in all environments, e.g. Chapter 7 shows that epistemics and evidentials do not pattern together in attitudinal complements. Furthermore, even indexical pronouns such as 'I' do not behave uniformly across languages, e.g. in some languages they may shift in attitudinal complements. Treating a context-sensitive element as some kind of 'I' (Murray 2012a; Lim 2010) means expecting that said element will exhibit an 'I'-like behavior across environments and languages. This expectation is not borne out.

8.4.1 Indexical approaches

The starting point of indexical approaches to evidential shift in questions (Murray (2010, 2012a) for Cheyenne; Lim (2010, 2011); Lim and Lee (2012) for Korean) is the following

observation. Evidentials and indexical pronouns are very similar in declaratives. However, they are not quite similar in questions: evidentials in questions shift to the addressee while indexical pronouns do not.

Indexical approaches argue that indexical elements fall at least into two classes: (i) ones that always refer to the actual utterance context, and (ii) ones that may switch their reference under certain circumstances. Evidential shift in questions is then analyzed as an instance of indexical shift, and evidential origo as a shiftable indexical. Indexical pronouns in Cheyenne and Korean are assigned rigid reference. In Lim's (2010; 2011) system (also used in (Lim and Lee 2012)), the desired effect is achieved by analyzing evidentials as monsters that take the character of an utterance and shift the context in its scope. Murray's analysis is briefly described below.

Murray (2012a) uses *Update with Centering, UC* (Bittner 2007, 2011) and extends to evidentials the view that indexicality is a variety of discourse reference. UC is a framework wherein information is ranked according to its discourse prominence. There are (i) *topical*, or *central*, entities (individuals, events, propositions, …) and (ii) *backgrounded* entities.

According to Murray, all indexicals are relativized to a speech event. Some indexicals have to be anchored to the actual utterance event. Some indexicals do not, and when a new speech event is brought up by some discourse operation, e.g. a question, they can become anaphoric to that new event. This is schematically represented below.

Table 8.2: Differences between indexicals and evidentials in (Murray 2012a)

	DECLARATIVES	QUESTIONS
Indexicals	$\text{AGT}(\overrightarrow{\top\varepsilon})$	$\text{AGT}(\overrightarrow{\top\varepsilon})$
Evidentials	$\text{RPT}(w, \text{AGT}(\top\varepsilon), p),\ \top\varepsilon = \overrightarrow{\top\varepsilon}$	$\text{RPT}(w, \text{AGT}(\top\varepsilon), p),\ \top\varepsilon \neq \overrightarrow{\top\varepsilon}$

$\overrightarrow{\top\varepsilon}$—speech event, $\top\varepsilon$—currently topical event (Murray's notation)

Table 8.2 correctly predicts what happens in Cheyenne. Consider (352) repeated below as (367):

(367)   Cheyenne

a.	Declarative	b.	Question
	ná-hó'tėhevá-**máse**		mo=**ná**-hó'tėhevá-**máse**
	1-win-**REP.1SG**		Y/N=**1**-win-**rep.1sg**
	'I won, I heard.'		'Given what you heard, did I win?'
			(Murray 2010: 73, ex.3.45)

In declaratives (367a), the utterance event and the topical speech event coincide so the first person agreement *ná* and the hearsay evidential *máse* refer to the speaker. In questions (367b),

a new topical event is introduced and the evidential shifts while 'I' does not change its reference. Note that this approach correctly predicts the lack of speaker-oriented readings of evidentials in questions. It does so by forcing evidentials to shift, without appealing to any other independently motivated property.

Indexical approaches run into the following trouble: once indexicals may switch their reference and once questions introduce an entity indexicals may refer to, we expect indexicals in indexical-shifting languages are expected to be able to shift in questions.

In UC, Murray's framework of choice, topical events can be introduced by means other than questions. For instance, attitude reports can introduce new discourse referents as well: mental states of the attitude subject (Bittner 2012) or speech events in case of speech predicates. In a system of this type, indexical shift in attitudes is analyzed as perspectival re-centering (discussed among pragmatic approaches to indexical shift in Chapter 7: Appendix F): indexicals that are normally anchored to the utterance event (or speech context, Koev 2013) may switch their reference (Bittner 2012 for Slavé; Koev 2013 for Kurmanji).

Murray's and Lim's analyses correctly predict the shifting profile of evidentials and indexicals for languages that do not shift indexicals at all, such as English and apparently Cheyenne.[111] The following picture is predicted by the indexical approaches for such languages (cf. Table 8.1):

Table 8.3: Evidentials and non-shiftable indexicals in questions

	'I'=speaker	'I'=addressee
Evidential origo = speaker	☹	☹
Evidential origo = addressee	✓	☹

The idea is that in e.g. Cheyenne indexicals never shift, in questions or attitudes. The system described above correctly predicts this situation.

However, the indexical approaches make incorrect predictions for languages where indexicals may shift in attitudes, such as Korean or Turkish:

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111. Murray does not discuss whether or not Cheyenne indexicals shift in attitude reports.

Table 8.4: Evidentials and shiftable indexicals in questions

	'I'=speaker	'I'=addressee
Evidential origo = speaker	☹	☹
Evidential origo = addressee	☹	✓

The idea is as follows. If evidential shift in questions and indexical shift in attitudes are of the same nature, then indexicals in indexical-shifting languages are expected to shift in questions. This expectation is not borne out. As I have discussed in section § 8.2.2, indexicals do not shift in questions, even in indexical-shifting languages, so indexical approaches overgenerate and cannot be used as a general mechanism of evidential shift in every language.

Furthermore, given how common it is for evidentials to shift in questions, it is desirable to have one analysis equally applicable to all languages regardless of whether these languages shift indexicals or not.[112]

8.4.2 Universal approaches

Universal approaches (Speas and Tenny 2003; McCready 2007; Bylinina, Sudo, and McCready 2014) (and to some extent Woods 2014) suggest that evidential shift in questions is an instance of a more general phenomenon often referred to as *interrogative flip* (term due to Tenny 2006).

The general set-up is as follows. Many elements in natural language express an opinion, point of view or epistemic state of some sentient individual, *perspectival center*, and just who this individual is depends on the type of utterance. In root declaratives, perspectival center is co-indexed with the speaker. In questions, it shifts to the addressee, which is exactly what we observe with evidentials in sentences like (352b) above. An important empirical observation made by universalists is that the shift in questions is widespread rather than being unique to evidentials.[113]

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112. Furthermore, there is an additional problem faced by Lim's approach. If evidentials are context-shifting operators, then indexicals in *indexical-shifting* languages must shift in their scope. This prediction is not borne out, as illustrated below with an example from Turkish:

(i) Turkish
Context: I spoke to my father …
(ben) hastalan-**miş-m**
(I) get.sick-**IND.PST-1SG**

   (i) NON-SHIFTED: 'I got sick, *I hear*'.

   (ii) SHIFTED: #'My father got sick, *I hear*'.

   This is a counter-example to the analysis of evidentials as context-overwriting operators. If evidentials were such operators, then shiftable indexicals in their scope would be able to shift.

113. It is common to list speech-act adverbials under the same rubric (Garrett 2001; Speas and Tenny 2003; Lim and Lee 2012; Zu 2015a). This is motivated by the following examples:

As another illustration of the pattern, consider the behavior of experiencer (*hungry*) and psych (*be bored*) predicates in languages like Japanese and Korean (first described by Kuno 1973). These predicates can only be used with first person subjects in root declaratives (368a) and second person subjects in questions (368b):[114]

(368)   Japanese experiencer predicates

    a.   ROOT DECLARATIVE
       watashi-wa / *anata-wa / *kare-wa sabishii desu.
       I-TOP   / you-TOP   / he-TOP   lonely COP.PRES
       '**I am**/ *you are/ *he is lonely.'   (adapted from Tenny 2006: 247; ex.2)

    b.   QUESTION
       *watashi-wa / **anata**-wa / *kare-wa sabishii desu   ka
       I-TOP   / **you**-TOP / he-TOP   lonely COP.PRES Q
       '*Am I / **Are you** / *Is he lonely?'   (Tenny 2006: 247; ex.4)

Yet another example of interrogative flip comes from discourse particles, such as German *wohl* (Zimmerman (2004), whose data I use below, only discusses the behavior of *wohl* and does not talk about interrogative flip):[115]

(369)   German *wohl*

    a.   ROOT DECLARATIVE
       Hania hat   **wohl** auch ihre Chefin eingeladen.
       Hanie have.3SG.PRES **wohl** too her boss   invite.PERF
       'Presumably, Hania has invited her boss, too.'

    b.   QUESTION
       Hat   Hania **wohl** auch ihre Chefin eingeladen?
       have.3SG.PRES Hania **wohl** too her boss   invite.PERF
       ≈'What is your guess: Did she or didn't she invite her boss?'
                                 (Zimmerman 2004: ex.7a-b)

Based on the pattern illustrated above, the core idea of universal approaches is that perspective-sensitivity comes from one (structural) source and should therefore be given one analysis.

(i)   **Honestly**, when will you finish the paper?

    (i) NON-SHIFTED: the speaker is honest in asking;

    (ii) SHIFTED: the speaker requests an honest reply from the addressee.

The reading in (ii) is neutral. The shifted interpretation in (iii) is rather marked pragmatically and seems to presuppose that the speaker has asked this same question before and requests that the addressee rethinks their answer. There is no such effect with other phenomena therefore I exclude speech-act adverbials from the general discussion of interrogative flip. I thank Pranav Anand for drawing my attention to this contrast.

114. The person restriction is lifted when an indirect evidential is used (Tenny 2006).

115. I thank Regine Eckardt for reminding me about these data.

According to Speas and Tenny (2003); Tenny (2006) and much subsequent work (see e.g. (Zu 2015b) for a recent application), interrogative flip lends support to the idea that individual responsible for anchoring of perspectival expressions is directly represented in the syntax, along with discourse participants. Independent evidence for having speaker and addressee in the syntax comes e.g. from languages with dedicated agreement with them, distinct from subject and object agreement, attested in e.g. Jingpo (Tibeto-Burmese), Basque, and across Nakh-Daghestanian (see (Zu 2013) and references therein).

According to this view that continues the line of research started by Rizzi (1997), the left periphery of the clause is partitioned into speech act domain and sentience domain that represent pragmatic information:

(370)   a.   sentience phrase, SenP, encodes *Seat of Knowledge*, implicit argument of perspective-sensitive elements;

      b.   speech act phrase, SAP, encodes Speaker and Addressee, one of which—depending on the clause type—determines the reference of Seat of Knowledge.

The reference of Seat of Knowledge is subject to locality restrictions: it is always determined by the closest binder (cf. Stephenson (2005, 2007a) and Hacquard (2006, 2010) for a very similar treatment of, respectively, taste predicates and epistemics, and modals). In root declaratives, it is the speaker. In questions, the addressee moves to above SenP, thus becoming the closest binder and the referent of perspective-sensitive expressions.

In another strand of universal approaches, McCready (2007) and a follow-up by Bylinina, Sudo, and McCready (2014) argue that the implicit argument of perspectivals directly refers to a dedicated context coordinate, *the judge*. Under this view—which takes up on the relativist analysis of taste predicates (Lasersohn 2005; Stephenson 2007a)—the judge is an individual coordinate distinct from both the speaker and the addressee:

(371) $c = \langle author, hearer, \mathbf{judge}, \ldots, world \rangle$

For Stephenson, the value of this coordinate is not fixed in matrix cases and, crucially, judge is not part of the context, but comes with the index. For McCready (2007) et al., in root declaratives judge is always the speaker:

(372) $Judge_c = Author_c$

This results in judge-relative expressions such as e.g. evidentials being always anchored to the speaker in declaratives. Here is a McCredian semantics for *allegedly*:

(373) $[\![$ allegedly p $]\!]^{\langle Author_c, Hearer_c, Judge_c, \ldots, w_c \rangle}$
      $= 1$ iff allegedly to $Judge_c$, p
      $=$ allegedly to $Author_c$, p

In questions, the judge may be shifted to the addressee with the help of a context-shifting operator Sh, a cousin of operators discussed in Chapter 7:

(374) $\llbracket Sh\ \phi \rrbracket^{\langle Author_c, Hearer_c, \textbf{\textit{Judge}}_c, ..., w_c \rangle} = \llbracket \phi \rrbracket^{\langle Author_c, Hearer_c, \textbf{\textit{Hearer}}_c, ..., w_c \rangle}$

<div align="right">

(McCready 2007: 439, ex. 23; my notation)

</div>

The operator appears in questions and rewrites the judge coordinate to the addressee. That's all it does and below is an illustration of how it works (for simplicity, I will treat a yes/no-question as a disjunction of propositions in its answer set introduced by the question operator):

(375) a. Was she allegedly possessed?[116]

  b. LF: [allegedly [$Q_{Y/N}$ [she was possessed]]]

  c. $\llbracket 375a \rrbracket^{\langle A_c, H_c, Judge_c, ... \rangle}$
  $= \llbracket Sh$ [allegedly [she-possessed $\wedge \neg$ [she-possessed]]] $\rrbracket^{\langle A_c, H_c, \textbf{\textit{Judge}}_c, ... \rangle}$
  $= \llbracket$ allegedly [she-possessed $\wedge \neg$ [she-possessed]] $\rrbracket^{\langle A_c, H_c, \textbf{\textit{H}}_c, ... \rangle}$
  $= 1$ iff allegedly to H_c, [she-possessed $\wedge \neg$ [she-possessed]]

The biggest problem with both types of universal approaches is that different phenomena putatively sensitive to point of view behave differently across environments. I outline these issues below. Besides, there is no coherent way to identify a perspective-sensitive expression, and different authors include different phenomena under this motley umbrella, including evidentials, epistemics, experiencer predicates, taste predicates (*awful*), expressives (*darn*), non-restrictive relative clauses, so-called speech-act adverbials (*honestly, seriously*), logophoric pronouns (e.g. Ewe *je*), long-distance reflexives (e.g. Japanese *zibun*), shiftable indexicals. Putting all of this in one box makes wrong empirical predictions and raises conceptual concerns.

Root clauses   As discussed in Chapter 6, the exact semantics of epistemic modals and taste predicates is a matter of debate. It is hard to identify the relevant knower and taster, and it is not obvious that they need to be represented in the semantics. There are analyses that treat them as relative to a community, or to an individual defined by the context of utterance, or to an individual defined by the context of assessment, or to no individual whatsoever, just body of knowledge or information state. I have shown that evidentials are different (at the very least hearsay and direct makers): Origo is unmistakably the speaker, even in scenarios that motivated relativist semantics for epistemics and taste predicates. Therefore, a unified semantics for all perspectivals is not justified based on the data from root clauses.

Attitudes   As discussed in detail in Chapters 5 and 7, different potentially shiftable elements have different shifting profiles in attitudes.

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116. Adapted from https://goo.gl/k6CYHU.

Pottsian supplements—expressives and non-restrictive relative clauses—are subject to an optional pragmatic shift (Amaral et al. 2007) that is not even constrained by a specific syntactic configuration (Harris and Potts 2009, 2011), as evidenced by (376):

(376) *Poor Joan seems to have grown crazier than ever.*

    a. **She** now claims that her apartment was bugged by the Feds, **who are listening to her every word**$_{JOAN}$.

    b. Her apartment was bugged by the Feds, **who are listening to her every word**$_{JOAN}$.
                                                (Harris and Potts 2009: Appendix A, ex.5)

Epistemics and taste predicates shift obligatorily . . . in the main predicate position (Stephenson 2007a; Hacquard 2006):[117]

(377) Meaghan thought [that this path might be an escape route].

    a. NON-SHIFTED: # . . . but she was sure it was not.

    b. SHIFTED: ✓ . . . but I was sure it was not.

However, neither epistemics nor taste predicates have to shift in the attributive position, as I first observed in (Korotkova 2015) for epistemic adjectives. See (Anand and Korotkova 2016) for an account for taste predicates.

Finally, I have argued in (Korotkova 2015) and in Chapter 7 that languages fall into three classes with respect to the availability of evidential shift, summarized in (378, repeated from 283):

(378) Typology of evidential shift

    A. **No evidential shift:** Georgian; Bulgarian (Sauerland and Schenner 2007; Koev 2016)*

    B. **Optional evidential shift:** German (Schenner 2010b); Turkish (Şener 2011); Bulgarian*

    C. **Obligatory evidential shift:** Korean (Lee 2013); Japanese; St'át'imcets (Matthewson et al. 2007); Tibetan (Garrett 2001); Zazaki (Gajewski 2004)
        * for some speakers

Throughout the dissertation, I have argued that despite the difference in the shifting behavior, these evidentials can be attributed an otherwise unified semantics. A similar typology is observed only for indexical shift, so the behavior of different perspectival elements in attitudes

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117. I do not discuss special *exocentric* cases (Lasersohn 2005; Stephenson 2007a). In such case, a predicate of personal taste is used by the speaker to talk qualities of an entity for which the speaker is not the relevant taster, such as cat food discussed by humans. Exocentric perspective is possible in attitudes and is problematic for many theories.

does not warrant a unified semantics for all of them. Furthermore, the shifting behavior of supplements and at least some evidentials is conditioned on the presence of a speech verb. This is in contrast with epistemics and taste predicates, whose shift is independent of the embedder.

Questions   The phenomenon of interrogative flip is not uniform. As argued in this chapter and elsewhere in the literature, evidentials have to shift. Not all of the elements exhibit the same pattern. For instance, spatial expressions (379) and taste predicates (380) do not have to shift:

(379)   Spatial deixis:
         Who is the person **on the left**?

   (i)   NON-SHIFTED: on my left

   (ii)   SHIFTED: on your left

(380)   Taste predicates:
         Was it **fun**? I don't remember.

While it is certainly possible for taste predicates to target the addressee's preferences in questions, (380) shows that it is not obligatory.

   Roberts (2015a) argues that epistemics may be speaker-oriented in questions, using examples as in (381) below:

(381)   *Context: Pascal and Mordecai are playing Mastermind. After some rounds where Mordecai gives Pascal hints about the solution, Pascal asks:*
         Must there be two reds?

Roberts claims that the modal in (381) is Pascal-oriented. I disagree with that claim. As has been known since Hacking (1967), epistemics involve a public component. Given the nature of the game, Mordecai is expected to give an answer based on the publicly available knowledge, rather than Pascal-exclusive knowledge—which, by the way, would be an impossible task.

   Another example of the lack of shift in questions comes from English "high" adverbs, which are often analyzed as making reference to speech acts. Such adverbs maybe do not shift at all:

(382)   Why did John **unfortunately** leave? #Something I personally find extremely fortunate
                                                              (Gärtner and Steinbach 2006: ex. 13a)

The continuation in (382) should have been possible if *fortunately* had an ability to refer to the addressee. These data provide another piece of evidence against treating perspective-sensitive expressions as uniform.

The bottom line is that the behavior of various elements that are often labeled as perspective-sensitive is not subject to the same pattern across a variety of environments: root clauses, attitude reports, and questions. This hugely undermines the idea that they should be attributed a unified syntax and or semantics.

8.4.3 Recap

In this section, I discussed two major families of approaches to evidential shift in questions. One family, indexical approaches, treats Origo as an indexical that may refer to contexts/events different from the original utterance context. Such an analysis inevitably predicts that shiftable indexicals in languages like Zazaki may shift in questions. This prediction is not borne out.

Another family puts evidentials in a larger context of perspective-sensitive phenomena and argues that these elements are either refer to the same context coordinate, shiftable by a monster operator, or all have an implicit argument that has to shift in questions and in attitudes for syntactic reasons. The main problem faced by this type of approach is that perspective-sensitive elements are a mixed bag and do not display a uniform pattern across the board. Furthermore, even in questions not every element has to shift and some elements do not shift at all. Universal approaches are thus not fine-grained enough to distinguish between different kinds of behavior across constructions.

In what follows, I will argue for an analysis that maintains the spirit of universal approaches but derives the shift in questions from pragmatics, which then can be further constrained or overriden by the semantics of particular elements. The advantage of this view is that it does not postulate a unified syntax and or semantics for perspective, an enterprise for which there is just not enough cross-linguistic data yet.

8.5 Proposal

Below is a summary of the puzzles that I address in this chapter:

I. If evidentials in a given language can appear in information-seeking questions, they would shift. This property does not correlate with the shift in attitudes. For instance, in Bulgarian and Turkish evidentials may shift to the attitude subject, but do not have to, while the shift to the addressee is obligatory. This alone indicates that the two varieties of evidential shift might not be of the same nature.

II. In addition to evidentials, there is a multitude of other elements that are subject to shift in questions. They vary in whether the shift is obligatory, as for experiencer and psych predicates in Japanese, or optional, as for the expressions of spatial deixis. Their overall behavior in other environments is also varied.

III. Indexical pronouns lack the ability to shift in questions. This pattern characterizes both personal (*I*) and adverbial (*here*) indexicals and is not correlated with the availability of shift in attitudes. In particular, indexicals in indexical-shifting languages such as Turkish do not shift to the addressee in matrix questions.

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Previous approaches either (i) parallel evidentials to indexicals and ultimately predict indexical shift in questions, or (ii) parallel evidentials to other interrogative-flip-prone elements and ultimately fail to differentiate between them across different configurations. Furthermore, the overall treatment of evidential shift is such that it requires additional machinery, semantic or syntactic, that forces evidentials to be anchored to the addressee in questions. I will argue that the phenomenon of shift in questions is best analyzed in Gricean terms, which makes evidential shift only expected. It is the lack of indexical shift that is more peculiar (if one wants to treat questions and attitudes on a par).

Based on the data above, I will defend Garrett's (2001) initial intuition that the shift in questions is driven by pragmatics. The criticism of this type of approach comes from the the lack of speaker-oriented readings for evidentials. The idea is that a purely pragmatic mechanism should make them marginal, rather than impossible.

I agree with this reasoning and show that the shift in questions in indeed optional for *some* elements. I further argue that the seemingly obligatory shift of evidentials results from an incompatibility between the pragmatics of information-seeking questions and the subjectivity of evidentials. This view predicts that in questions that impose different pragmatic conditions evidentials may, after all, be speaker-oriented. The prediction is borne out.

The pragmatics of questions makes the addressee available for expressions that deal with opinion, as it the addressee's opinion that matters most in such environments. Indexicals, on the other hand, do not have this semantic component and therefore lack the ability to shift in questions. Finally, the mechanism that usually shifts indexicals is tied to the presence of an attitude verb and is thus not available in questions for syntactic reasons. These facts constitute an additional argument against pragmatic theories of indexical shift (Bittner 2012; Koev 2013; Roberts 2015b), where that phenomenon is viewed as a mechanism of perspectival re-centering.

8.5.1   Evidential shift

8.5.1.1   Ingredients

Semantics for evidentials   In Part II, I have introduced two versions for the semantics of evidentials. In this chapter, I am going to use the second version as it makes it explicit that evidentials talk about epistemic states and treats evidentials as attitudes 'de se'. It is repeated in the generalized version below:

(383) $[\![\text{EV}]\!]^{c,i,g} = \lambda p.\ p(i)\ \wedge\ \forall \langle x', w' \rangle \in \text{EPIST}_{Origo_c, w_c} : \text{ACQUIRE}(p)(x', w')$,
where ACQUIRE is a stand-in for predicates that specify how Origo learned the scope proposition

Semantics for questions   I will assume the proposition-set semantics for questions, in the Hamblin (1973)-Karttunen (1977) tradition.[118] In this semantics, the denotation of a question is the set of its possible answers, both true and false. For instance, the polar question operator receives the following interpretation:

(384) $[\![Q_{Y/N}]\!] = \lambda p.\ \lambda q.\ [q = p \vee q = \neg p]$

Below is a sample derivation of a matrix polar question (ignoring the syntax of auxiliaries):

(385)   a.   Is Kit asleep?

     b.   LF: $[_{CP}\ Q_{Y/N}\ [_{TP}\ \text{Kit is asleep}]\ ]$

     c. $[\![[_{CP}\ Q_{Y/N}\ [_{TP}\ \text{Kit is asleep}\ ]\ ]\ ]\!]^{c,i,g}$
       $= [\![Q_{Y/N}]\!]^{c,i,g}(\lambda i'.\ [\![\text{Kit is asleep}]\!]^{c,i',g})$
       $= \lambda q.\ [q = \lambda i.\ \text{Kit is asleep at } i\ \vee\ q = \lambda i.\ \neg[\text{Kit is asleep at } i]]$
       $= \{\text{``that Kit is asleep''}, \text{``that Kit is not asleep''}\}$

Pragmatics for questions   Canonical questions are sincere inquiries for information: the speaker does not know the answer and expects the addressee to be in a better position to have it (for now, I put aside biased questions, wherein the speaker has a strong suspicion as to what the answer may be and is asking a question to confirm this suspicion; see Romero (2015) for an overview of various types of biased questions and approaches to them). However, interrogative clauses—sentences that have a particular syntactic make-up—can serve a number of functions. Ordinary questions are just one of these functions, others including, for instance, rhetorical questions.

Following Caponigro and Sprouse (2007) and also Gunlogson (2003), I will assume that the sole difference between genuine information-seeking questions and other types lies at the level of pragmatics (though see Guerzoni 2004). In other words, e.g. ordinary questions and rhetorical questions have the same syntax and the same semantic denotation.

There is a number of ways to formalize the intuition about the questioner's sincerity in ordinary questions. In the speech act theory, Faller's (2002) framework of choice, it can be accomplished via adding a sincerity condition on speech acts with questions (though questions are not discussed by Searle and Vanderveken (1985)). In commitment-based frameworks (Lauer 2013; Krifka 2014), this intuition can be analyzed by saying that the speaker commits to ignorance about the answer by making a speech act of question. Below is the version I will be using (following Caponigro and Sprouse 2007). Nothing hinges on this specific implementation, and my argumentation can be recast in other frameworks provided that the notion of speaker's unbiased inquiry for information is preserved.

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118. Nothing hinges on this particular choice of semantics for questions. For an overview of different families of approaches see e.g. Krifka 2011 .

Common ground, CG, will be treated as the set of propositions that contains interlocutors' mutual beliefs and propositions taken by them for granted for the sake of conversation (without necessarily believing them):

(386)   CG = { p | p is a mutual belief of the interlocutors }

In addition to CG, there are individual beliefs held by the speaker and the addressee:

(387)   SB = { p | p is a belief of the speaker }

(388)   AB = { p | p is a belief of the addressee }

Note that I am not making a distinction between individual *discourse commitments*, i.e. individual beliefs that were vocalized but aren't necessarily mutual, and *private beliefs*, i.e. ones that the other interlocutor may be unaware of. SB includes beliefs of both types. See e.g. Gunlogson (2003) for a more fine-grained distinction and a motivation for it.

Given this set-up, canonical questions are treated as questions whose answers are not contained in the speaker's belief set. For a polar question, it yields the following:

(389)   Canonical questions ?p:
        $p \notin SB \wedge \neg p \notin SB$ (notational variant of Caponigro and Sprouse's (2007) 34)

This amounts to the condition of sincere inquiry.[119]

Rhetorical questions, on the other hand, are treated as questions whose answers are known to both the speaker and the addressee, namely, contained in the common ground:

(390)   Rhetorical questions:
        $p \in CG \vee \neg p \in CG$ (notational variant of Caponigro and Sprouse's (2007) 35)

8.5.1.2 Semantics

Given the combination of the semantics for evidentials and the semantics for questions, below is a derivation for a polar question containing an evidential. I use (348) as an illustration, and the procedure can be generalized to evidentials with other information sources and to other types of questions.

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119. I am a bit sloppy here with what the speaker knows vs. what the speaker believes. Given that knowledge implies belief, i.e. we believe propositions that we know, the propositions known to the speaker will be in SB.

(391) a. Bulgarian

Mečka li e mina-**l**-a ottuk?
bear Q be.3SG.PRES pass-**IND.PST**-SG.F from.here
'Dis a bear pass-EV here?'

b. LF: $[_{CP}$ Q$_{Y/N}$ [EV $[_{TP}$ Kit is asleep]]]

c. $[[_{CP}$ Q$_{Y/N}$ [EV $[_{TP}$ bear passed]]] $]^{c,i,g}$
$= [Q_{Y/N}]^{c,i,g}(\lambda i'. [$EV $[_{TP}$ bear passed] $]^{c,i',g})$
$= \lambda q.[q = \lambda i.[$bear passed at $i \wedge \forall\langle x',w'\rangle \in$ EPIST$_{Origo_c,w_c}$:
x' heard in w' that bear passed]
$\vee q = \lambda i.\neg[$bear passed at $i \wedge \forall\langle x',w'\rangle \in$ EPIST$_{Origo_c,w_c}$:
x' heard in w' that bear passed]]
$= \lambda q.[q = \lambda i.[$bear passed at $i \wedge \forall\langle x',w'\rangle \in$ EPIST$_{Origo_c,w_c}$:
x' heard in w' that bear passed]
$\vee q = \lambda i.[\neg[$bear passed at $i] \vee \exists\langle x',w'\rangle \in$ EPIST$_{Origo_c,w_c}$:
$\neg[x'$ heard in w' that bear passed]]]$
$= \{$"that bear passed $\wedge \forall\langle x',w'\rangle \in$ EPIST$_{Origo_c,w_c}$:
x' heard in w' that bear passed",
"that bear did not pass $\vee \exists\langle x',w'\rangle \in$ EPIST$_{Origo_c,w_c}$:
x' did not hear in w' that bear passed"$\}$

The first member of the resulting set roughly corresponds to an answer "Given what Origo heard, a bear passed here". Intuitively, the second member should have a similar form, namely, "Given what Origo heard, a bear did not pass here". However, this is not what (391c) says.

The second member of the resulting answer set is a disjunction. The first disjunct corresponds to an answer without any evidential "A bear did not pass here". The second disjunct corresponds to "It is not the case that Origo heard that a bear passed here". This, in turn, may mean two things: (i) "Origo heard that a bear did not pass here", and (ii) "Origo has direct evidence that a bear passed here".

The second disjunct in the resulting derivation is, intuitively, too weak. It is expected to mean "Given what Origo heard, a bear did not pass here". I propose that the principle of Excluded Middle (Bartsch 1973) is at play in evidential questions. This principle is often invoked to explain the behavior of Neg-Raising predicates (see next section), illustrated below:

(392) I don't believe that there is water on Mars.
⤳ I believe that there no water on Mars.

Neg-Raising predicates behave in such a way that negation on the attitude predicate is interpreted in the complement. According to the Excluded Middle principle, the subject has *some* belief regarding the complement, which explains how the sentence gets the interpretation it gets:

(393)   I don't believe that there is water on Mars.
        p = 'There is water on Mars'

    Step1.   Meaning without the Excluded Middle:
           $\neg\text{BELIEVE}(p)(\text{I})$

    Step2.   The Excluded Middle:
           $\mathbf{\text{BELIEVE}(p)(I) \vee \text{BELIEVE}(\neg p)(I)}$

    Step3.   Meaning with the Excluded Middle:
           $[\,\neg\text{BELIEVE}(p)(\text{I})\,] \wedge [\,\mathbf{\text{BELIEVE}(p)(I) \vee \text{BELIEVE}(\neg p)(I)}\,]$
           $= [\,\neg\text{BELIEVE}(p)(\text{I}) \wedge \mathbf{\text{BELIEVE}(p)(I)}\,] \vee [\,\neg\text{BELIEVE}(p)(\text{I}) \wedge \mathbf{\text{BELIEVE}(\neg p)(I)}\,]$
           $= \text{BELIEVE}(\neg p)(\text{I})$

Uegaki (2015) applies the Excluded Middle principle outside of Neg-Raising. I propose to apply it to evidentials-in-questions.

When the speaker asks an evidential question, they expect the addressee to have evidence of a certain type about the proposition in question. For instance, the speaker expects that the addressee has direct evidence for p and has direct evidence for $\neg p$. This expectation thus strengthens the second member of the answer set. The crucial step is the interaction of negation and the second disjunct in the answer set: negation is interpreted low, thus applying to each of the conjuncts individually. The resulting derivation is given below.

(394) $[\![\,[_{\text{CP}}\ Q_{\text{Y/N}}\ [\ \text{EV}\ [_{\text{TP}}\ p\ ]\,]\,]\,]\!]^{c,i,g}$

    Step1.   Meaning without the Excluded Middle:
           $[\,p \wedge \forall\langle x',w'\rangle \in \text{EPIST}_{Origo_c,w_c} : x' \text{ heard } p \text{ in } w'\,]$
              $\vee [\,\neg p \wedge \neg [\,\forall\langle x',w'\rangle \in \text{EPIST}_{Origo_c,w_c} : x' \text{ heard } p \text{ in } w'\,]\,]$

    Step2.   The Excluded Middle:
           $[\,\forall\langle x',w'\rangle \in \mathbf{\text{EPIST}}_{Origo_c,w_c} : x' \text{ heard } p \text{ in } w'\,]$
              $\vee [\,\forall\langle x',w'\rangle \in \mathbf{\text{EPIST}}_{Origo_c,w_c} : x' \text{ heard } \neg p \text{ in } w'\,]$

    Step3.   Meaning with the Excluded Middle:
           $[\,[\,p \wedge \forall\langle x',w'\rangle \in \text{EPIST}_{Origo_c,w_c} : x' \text{ heard } p \text{ in } w'\,]$
              $\vee [\,\neg p \wedge \neg [\,\forall\langle x',w'\rangle \in \text{EPIST}_{Origo_c,w_c} : x' \text{ heard } p \text{ in } w'\,]\,]\,]$
                $\wedge [\,[\,\mathbf{\forall\langle x',w'\rangle \in \text{EPIST}_{Origo_c,w_c} : x' \text{ heard } p \text{ in } w'}\,]$
                  $\vee [\,\mathbf{\forall\langle x',w'\rangle \in \text{EPIST}_{Origo_c,w_c} : x' \text{ heard } \neg p \text{ in } w'}\,]\,]$
           $= [\,[\,[\,p \wedge \forall\langle x',w'\rangle \in \text{EPIST}_{Origo_c,w_c} : x' \text{ heard } p \text{ in } w'\,]$
              $\vee[\,\neg p \wedge \neg[\,\forall\langle x',w'\rangle \in \text{EPIST}_{Origo_c,w_c} : x' \text{ heard } p \text{ in } w'\,]\,]\,]$
                $\wedge [\,\mathbf{\forall\langle x',w'\rangle \in \text{EPIST}_{Origo_c,w_c} : x' \text{ heard } p \text{ in } w'}\,]\,]$
                  $\vee [\,[\,[\,p \wedge \forall\langle x',w'\rangle \in \text{EPIST}_{Origo_c,w_c} : x' \text{ heard } p \text{ in } w'\,]$
                  $\vee[\,\neg p \wedge \forall\langle x',w'\rangle \in \text{EPIST}_{Origo_c,w_c} : x' \text{ heard } p \text{ in } w'\,]\,]$
                    $\wedge [\,\mathbf{\forall\langle x',w'\rangle \in \text{EPIST}_{Origo_c,w_c} : x' \text{ heard } \neg p \text{ in } w'}\,]\,]$
           $= [\,p \wedge \forall\langle x',w'\rangle \in \text{EPIST}_{Origo_c,w_c} : x' \text{ heard } p \text{ in } w'\,]$
              $\vee[\,\neg p \wedge \forall\langle x',w'\rangle \in \text{EPIST}_{Origo_c,w_c} : x' \text{ heard } \neg p \text{ in } w'\,]$

The resulting semantics for (391) thus looks as follows:

(395) $[[[_{CP} \ Q_{Y/N} \ [\ EV \ [_{TP} \ \text{bear passed} \ ] \ ] \ ] \ ]]^{c,i,g}$
$= \{$"that bear passed $\wedge \ \forall \langle x', w' \rangle \in \text{EPIST}_{Origo_c,w_c}$:
$\qquad x'$ heard in w' that bear passed",
$\qquad$"that bear did not pass $\wedge \ \forall \langle x', w' \rangle \in \text{EPIST}_{Origo_c,w_c}$:
$\qquad x'$ heard in w' that bear did not pass"$\}$

8.5.1.3 Analytical alternatives

Below I outline two alternative approaches to evidentials-in-questions and their respective problems.

Neg-Raising   As mentioned in the previous section, the Excluded Middle principle is crucial in various analysis of Neg-Raising predicates of the sort discussed in detail in (Bartsch 1973; Horn 1978; Gajewski 2005, 2007; Romoli 2013; Homer 2015). Such predicates allow an interpretation where negation is interpreted low despite its surface position, as in (392) above (sometimes negation cannot be interpreted high, as with English *will*; Winans 2016).

A possible analytical option is to treat evidentials as Neg-Raisers.[120] Such an approach would correctly predict the interpretation in questions. Furthermore, this move is supported by the cross-linguistic data from clause-mate negation: as discussed in Chapter 4: Appendix D, evidentials are never interpreted in the scope of negation. This move would also allow to maintain the unorthodox conjunction semantics for evidentials that I advocate in the dissertation.

However, an analysis of evidentials as Neg-Raisers makes specific predictions with respect to their behavior in a range of environments (see e.g. (Homer 2015) for empirical diagnostics of Neg-Raisers). For instance, they Neg-Raisers are expected to license polarity items, and interact in a particular way with negative quantifiers and *bona fide* Neg-Raising predicates, such as *don't think*. Checking these predictions would involve first identifying NPIs and Neg-Raisers in respective languages, which is a separate task. For now I conclude that even though the Neg-Raising analysis of evidentials is certainly an analytical option, currently there is no empirical evidence to advocate or refute it.

Projection   According to the mainstream view adopted in the literature, the ER is a type of NAI content analyzed as a presupposition (Izvorski 1997; Matthewson et al. 2007) or a piece of peripheral discourse-new information akin to supplements (Murray 2010, 2014; Koev 2016). Questions are included in the *Family of sentences test* (Chierchia and McConnell-Ginet 2000) because it is an environment that helps identify presuppositions (and other types of projective content), as shown in (396, partially repeated from 185):

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120. I thank Yael Sharvit for this suggestion.

(396)   a.   PLAIN SENTENCE
             Humpty Dumpty fell again.
             ⤳ Humpty Dumpty fell at least once before.

        b.   QUESTION
             Did Humpty Dumpty fall again?
             ⤳ Humpty Dumpty fell at least once before.

It has been argued that the ER projects in questions, which amounts to saying that it escapes the scope of the question operator. The semantic denotation of a question with projective evidentials would look as follows:[121]

(397) $[\![[_{CP} \ Q_{Y/N} \ [\ EV \ [_{TP} \text{ bear passed }] \ ] \ ] \ ]\!]^{c,i,g}$
        $= [\![Q_{Y/N}]\!]^{c,i,g}(\lambda i'. \ [\![EV \ [_{TP} \text{ bear passed }] \ ]\!]^{c,i',g})$
        $= \lambda q.[q = \lambda i.[\text{bear passed at } i \ \lor \ \neg[\text{bear passed at } i \ ] \ ] \ ]$
        $\quad \land \ \forall \langle x', w' \rangle \in \text{EPIST}_{Origo_c, w_c} : x' \text{ heard in } w' \text{ that bear passed}]$

As I have shown in this chapter, the interpretations of evidentials in questions are subject to universal constraints and it is thus desirable to come up with a solution that would work for all languages with evidentials. Treating interpretations in questions as a result of projection suggests that there is independent evidence for treating evidentials as contributing projective content.

Throughout the dissertation, I have argued against this widespread assumption. First, I have pointed out that the notions "not-at-issue" and "projective" should be separated and argued in Chapter 4 against treating evidentials as NAI based on the data from denials and other types of propositional anaphora. Second, I have shown that the projective behavior of evidentials is not uniform across languages. Crucial data from conditionals and external negation are missing. It is thus premature to claim, based on their behavior in questions, that evidentials contribute projective content until and unless such data become available.

8.5.1.4   Perspective

In the previous sections, I laid out several ways to compositionally analyze evidentials-in-questions. However, so far I have not said anything about the shift in questions, of evidentials and otherwise. I argue that the shift may take place because questions make the addressee available for pragmatic operations, and is not a a result of a dedicated mechanism that forces some elements to switch their perspective.

To understand the nature of interrogative flip, it is essential to first spell out what questions do. The crucial intuition is that information-seeking questions are by default about the

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121. The implementation I provide below suggests that Origo has relevant evidence only for one of the answers, but there are ways to remedy this problem, see e.g. Murray (2010) who analyzes the ER as a restriction imposed on the partition, which results in Origo having evidence for either the scope proposition or its complement.

addressee's information state. Even simple questions without evidentials or other perspectival elements solicit the addressee's opinion regarding a particular issue. This orientation is achieved automatically by virtue of rules governing felicitous discourse (see Potts (2006) on how to arrive to this pragmatically in a strictly Gricean way): there is no need to explicitly incorporate the addressee in the *semantics* of questions. The speakers know what they believe and by making a query they indicate that they would like to consult someone else's opinion on the subject matter.

It then comes as no surprise that elements that overtly specify point of the view may shift to the addressee, the idea first articulated by Garrett (2001) and then refuted in the literature for the reasons I discuss below. I argue that the shift in questions is a result of pragmatic inference rather than a dedicated mechanism. Under this view, anything that deals with opinion is expected to be able to shift in questions. The immediate advantage of this view is that it allows to acknowledge that different ways to express opinion may have something in common without incorrectly claiming that they form a natural class.

This view makes the following prediction: if the shift is rooted in pragmatics, it should be optional unless overridden by hard constraints. This prediction is borne out.

Perspective-sensitive expressions vary in whether the shift is optional or obligatory, a fact I cited as an argument against universal approaches in §8.4.2. For instance, spatial expressions (Barlew 2016) may refer to a salient individual, who isn't necessarily a discourse participant. Another example comes from the behavior of English slifts (Ross 1973). These configurations typically feature a first-person subject in declaratives (398a) and a second-person subject in questions (398b, the so-called *wh*-slifting; Haddican et al. 2014):

(398)   a.   The climate is changing fast, *I think*.

      b.   How fast is the climate changing *do you think*?

The set of verbs allowed in slifts is limited to verbs of speech and of mental attitude. It is thus only natural to regard the person alternation in (398a) and (398b) as a case of interrogative flip. However, the second person subject in questions is just a preference, and in fact both first- and third subjects are allowed:

(399)   a.   How fast is the climate changing *did I say*?

      b.   How fast is the climate changing *did John say*?

The lack of an absolute restriction to second-person subjects is explained if interrogative flip is a pragmatic phenomenon that anchors opinion-related material to the addressee in questions. In and of itself, it does not preclude speaker-oriented readings. I argue that additional constraints are needed to explain why for some elements only shifted readings are possible. Below I show that subjectivity places such constraints on evidentials.

In the semantics I advocate for evidentials, they deal with epistemic states, which explains why they *can* shift. A standard argument against (Garrett 2001) is that for evidentials—in contrast to the expressions mentioned above—the shift seems to be obligatory. I argue that

what looks like obligatory shift in information-seeking questions is yet another manifestation of subjectivity. I further show that under the right pragmatic conditions, evidentials may be speaker-oriented in non-canonical questions—a fact not predicted by approaches that encode the shift into semantics.

(400) is a semantic denotation of an evidential question:

(400) $[[_{\text{CP}} Q_{\text{Y/N}} [\text{ EV } [_{\text{TP}} \text{p}]]]]^{c,i,g}$
$= \{p \ \wedge \ \forall \langle x', w' \rangle \in \text{EPIST}_{Origo_c,w_c} : x' \text{ heard } p \text{ in } w',$
$\quad \neg p \ \wedge \ \forall \langle x', w' \rangle \in \text{EPIST}_{Origo_c,w_c} : x' \text{ heard } \neg p \text{ in } w'\}$

I argue that one of the following conditions should be met for an evidential to be anchored to the speaker in questions.

How to be speaker-oriented in questions I   A speaker-anchored reading should be available if the speaker is not aware of what their own evidence is, and is making an inquiry regarding it. So, for instance, the speaker thinks they perceived something, but can't figure out what exactly. In this case it may make sense to ask someone else.

I argue that this interpretation is not available for evidentials-in-questions because it is in direct conflict with subjectivity. Part II provides ample evidence for the subjectivity of evidentials that manifests itself in a range of constraints. Specifically, I have argued that evidentials are obligatorily first-person statements that describe cognitive processes that resist third-party assessment, such as introspection. Origo always has the highest epistemic authority regarding their evidence. Therefore, it is impossible to use an evidential in question so that it asks the addressee to evaluate the speaker's evidence.

This condition cannot be met as the semantics of evidentials overrides what is otherwise permitted in questions. The prediction of this view is that other subjective expressions would behave similarly to evidentials.

How to be speaker-oriented in questions II   A speaker-oriented reading should be available if the speaker is aware of their evidence and knows the answer to the question, or if the speaker has a hunch regarding what the answer could be.

This condition is in conflict with the ignorance requirement imposed by information-seeking questions: the speaker only asks a question if the answer is not known to them. However, this condition may be met if pragmatic circumstances change. Specifically, various types of non-canonical questions differ from ordinary questions in their pragmatics. The pragmatic approach to interrogative flip that I advocate predicts that speaker-oriented readings should be attested in those types of questions.

The existing approaches claim that evidentials-in-questions must shift because otherwise there would be nothing in the system to prevent the non-attested speaker-oriented readings. I show that there could be two conditions under which evidentials could be speaker-oriented.

The first condition cannot be met due to the subjectivity of evidentials, independently motivated by their behavior in dialogues and attitudes. The second condition, on the other hand, can be met in non-canonical questions. Below I illustrate speaker-oriented readings with data from Bulgarian.

First, evidentials may be used in questions whose pragmatics requires that the speaker knows the answer, such as quiz questions. One way to flesh out the difference between quiz questions and ordinary questions is as follows: with the latter, the speaker hopes that the addressee will know the answer, while the latter, the speaker is testing the addressee' command of the material (Caponigro and Sprouse 2007). As (401b) shows, evidentials are speaker-oriented in such questions.

(401) Bulgarian

    a. ORDINARY QUESTION
       Context: I am absolutely clueless about Bulgarian. I ask a linguist who has only learned Bulgarian phonotactics and will have to infer based on the form.
       koja   ot tezi   e   bi-**l**-a   duma v bâlgarskija?
       which of this.PL be.3SG.PRES be-**IND.PST**-F word in Bulgarian
       'Which of these is a word in Bulgarian?'

    b. QUIZ QUESTION
       Context: I am native speaker of Bulgarian. I ask a linguist who has only learned Bulgarian phonotactics and will have to infer based on the form.
       koja   ot tezi   { e   / *e   bi-**l**-a   } duma v
       which of this.PL { be.3SG.PRES / be.3SG.PRES be-**IND.PST**-F } word in
       bâlgarskija?
       Bulgarian
       'Which of these is a word in Bulgarian?'

In (401a), the speaker makes an inquiry for information and expects the addressee to base their reply on inference. In (401b), the speaker knows the answer, and is testing the addressee's knowledge. In the latter case, the use of indirect is infelicitous even though the addressee does not have direct evidence for their answer. While I don't have access to languages with morphologically marked direct evidentials (e.g. Tibetan or Quechua), the prediction is that they would exhibit a pattern similar to the one in (401).[122]

Second, evidentials may be used in constructions that are independently used as biased questions, as as illustrated in (402c):

(402) Bulgarian

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122. It is often argued that in languages such as Bulgarian or Turkish the morphologically unmarked form is a direct evidential. I refrain from to making a stand on this issue and thus only discuss the behavior of morphologically marked forms.

a. PLAIN QUESTION
   Ortcutt e   špionin?
   Ortcutt be.3SG.PRES spy
   'Is Ortuctt a spy?'

b. BIASED QUESTION
   Context: I see Ortcutt on the beach and he looks suspicious. I conclude that he is a spy and ask to confirm this conclusion.
   Ortcutt e   špionin nali?
   Ortcutt be.3SG.PRES spy   PRTCL
   'Isn't Ortcutt a spy?'

c. BIASED QUESTION WITH AN EVIDENTIAL
   Context: I hear rumors that Ortcutt is a spy. I ask to confirm that.
   Ortcutt bi-l   špionin nali?
   Ortcutt be-IND spy   PRTCL
   ≈ 'Ortcutt is a spy, *I heard*. Is that true?'

(402a) is a plain question that can be asked out of the blue. The speaker may have no idea regarding the answer. (402b), on the other hand, carries an epistemic bias introduced by the particle *nali*. When such questions are used, the speaker signals that have an opinion which they want to confirm. The same is true for an evidential biased question. In (402c), the speaker has a suspicion that Ortcutt is a spy, the suspicion being based on hearsay. The point of the question is to confirm this suspicion. Semantically, (402c) is not just soliciting replies about whether or not Ortcutt is a spy. It requests a confirmation, which in turn warrants speaker-orientedness of the evidential. Similar sentences are cited by San Roque et al. (in press) as putative counter-examples to the universal nature of evidential shift in questions. I argue that it is only natural for evidentials to be speaker-oriented in such questions. For instance, the same effects as in Bulgarian (401b) and (402c) also hold for Turkish.

Similar observations regarding biased questions are made by Bhadra (2016) for Bangla (Indo-Aryan). Bhadra argues that hearsay *naki* is always speaker-oriented, which leads to a bias in questions:

(403) Bangla
     Context: John heard that B proposed to M, and M rejected it.
     Tumi **naki** B-er   prostab protyakhyan kor-echo
     you REP   B-GEN proposal refuse   do-2.PERF
     'You rejected B's proposal, *I heard*. Is it true?'   (adapted from Bhadra 2016: ex.41)

The data as in (403) fit squarely into the view I delineated above: the shift is obligatory only in information-seeking questions. In other environments, the restriction may be lifted, which I argue not to be a semantic property of evidentials, but a general pattern of how evidentials interact with the pragmatics of questions.

If I understand Bhadra's proposal correctly, she claims that the source of bias in (403) is the evidential itself. To test this hypothesis, the following needs to be checked. First, it is not clear how *naki* behaves in ordinary questions: the context in (403) is incompatible with a naive inquiry for information. Second, it is not clear what other biased questions in the language look like and whether *naki* can be used in those configurations. So far, it is not clear whether *naki* carries a bias itself or whether it is compatible with biased questions. A guiding parallel that comes to mind is the behavior of German *doch*. This particle cannot be used in polar questions, but is felicitous in biased questions (see (Kraus 2015) for discussion and further references).

Note that I use the term biased question rather loosely to indicate that such questions are more than simple inquiries. Rather, the asker often has a strong opinion on the subject and seeks to confirm it by posing a question, and requests for confirmation are hallmarks of biased questions.

In well-studied languages such as English and German, recent research has identified a range of interrogative configurations that signal epistemic bias, including English rising declaratives as in (404a) (Gunlogson 2003), negative questions as in (404b) (Büring and Gunlogson 2000; Romero and Han 2004), or tag questions as in (404c) (Reese 2007).

(404) a. You like sauerkraut?

b. Don't you like sauerkraut?

c. You like sauerkraut, don't you?

Ordinary questions are unibiased inquiries for information. In the case of (404a)-(404c), the speaker has an opinion regarding the answer and is seeking to confirm it. Bias has been argued to arise contextually (Gunlogson 2003) or to be triggered by a semantic operator (Romero and Han 2004). At the moment, this is an area of active ongoing research that aims to establish the sources of bias within and across languages; see (Reese 2007; Romero 2015) for an overview.

It would be especially interesting to look at evidentials in various types of biased questions, given (A) what I said above about the speaker-oriented readings in non-canonical questions, and (B) my analysis of the speaker's expectation for a reply based on a particular evidence as a form of contextual bias. I leave this endeavor for future research, and would only note it that would be first necessary to identify biased question strategies in respective languages.

In this section, I only discussed evidentials. However, the prediction is that other subjective expressions would behave similarly. This is true at least for German *wohl*, which normally shifts in questions (369b) but can be speaker-oreinted in rising declaratives (Zimmerman 2004: ex.56a).

8.5.2 Indexical non-shift

To recapitulate, indexicals do not shift in questions even in indexical-shifting languages, as illustrated in (405, repeated from 354):

(405) Turkish, personal indexical
Context: Natasha and I are talking about kale.

    a. Declarative:

Natasha	[sev-er-**im**	] di-yor
Natasha.NOM	[like-HAB-**1SG**	] say1-PROG

        (i)   NON-SHIFTED: ✓'Natasha says I (speaker) like it.'
        (ii)   SHIFTED: ✓'Natasha says she (Natasha) likes it.'

    b. Question:

sev-er	mi-**yim**?
like-HAB	Y/N-**COP.1SG**

        (i)   NON-SHIFTED: ✓'Do I like it?'
        (ii)   SHIFTED: # 'Do you like it?'

The indexical approaches frame the evidential-indexical asymmetry in questions as though shifting is a peculiar property of evidentials that requires additional machinery. The universal approaches that look at a larger array of data make it clear that shifting is very common. It is the behavior of indexicals that is puzzling, given that practically everything else in the shiftable realm may or must shift.

I have argued that interrogative flip is a pragmatic mechanism that targets expressions that have to do with opinion, construed very broadly. Indexical pronouns, under most treatments, are not about opinion or perspective. Their sole function is to make reference to a particular antecedent and they do not induce doxastic alternatives of any kind. In the simplest version, *I* may receive a strictly Kaplanian semantics:

(406) $[\![\text{ I }]\!]^c = \text{Author}_c$

Sometimes indexicals may be bound (fake indexicals; §5.4.1) and in some languages, they may refer to the author of a reported utterance (shifted indexicals; Chapter 7). These facts do not affect my fundamental claim. The function of indexicals is to make reference to some individual, which does not involve talking about perspective. This is the reason for why the reference of indexicals is not affected by questions: there is nothing in their semantics that would be susceptible to the type of shift that makes evidentials anchored to the addressee.

As to the mechanism that shifts indexicals in attitudes, I argue that it is not available in questions. As discussed at length in Chapter 7: Appendix F, indexical shift is highly constrained in a way that is not handled by pragmatic theories. For instance, it is not licensed in TP nominalizations (Korean, Turkish, Uyghur) and may affect only a part of the clause (the asymmetry between nominative and accusative subjects in Uyghur). Such syntactic restrictions are easier to formulate with the help of context-shifting operators. Given this independent evidence for parameterizing indexical shift using syntactic means, licensing conditions on context-shifters can be formulated in a way that bans them in questions. Furthermore, it needs to be done only if questions and attitudes are viewed as being of the same nature. There are several phenomena in natural language that only occur in attitudinal contexts, such as subjunctive mood

or Sequence of Tense. Indexical shift is just one of them, and it is not surprising that it is not available in questions.

In light of this discussion, it is fruitful to compare the behavior of *bona fide* indexicals with *egophoric* ("about self") agreement (see Floyd et al. (forth.) for an overview).[123] That agreement is only used with the first-person subjects in root declaratives, the second-person subjects in questions, and third-person subjects in attitude reports if they are co-indexed with the matrix subject. (407)-(409) illustrate the pattern with the data from a Tibeto-Burmese language Newari.

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123. Another term that is often used in the literature is *conjunct-disjunct agreement*.

(407) Newari: root declaratives

    a. ji ana wan-**ā**
       I there go-PST.**EGO**
       'I went there'

    b. cha ana wan-a
       you there go-PST.NEGO
       'You went there'

    c. wa ana wan-a
       s/he there go-PST.NEGO
       'S/he went there'

                     (Zu 2015b: ex.14)

(408) Newari: questions

    a. ji ana wan-a lā
       I there go-PST.NEGO Q
       'Did I go there?'

    b. cha ana wan-**ā** lā
       you there go-PST.**EGO** Q
       'Did you go there?'

    c. wa ana wan-a lā
       s/he there go-PST.NEGO Q
       'Did s/he go there?'

                     (Zu 2015b: ex.15)

(409) Newari: attitudes

    a. wō: [wa ana wan-**ā** dhā:ka] dhāla
       she.ERG [s/he there go-PST.**EGO** COMP] said
       'She$_i$ said that she$_{i,*j}$ went there.'

    b. wō: [wa ana wan-a dhā:ka] dhāla
       she.ERG [s/he there go-PST.NEGO COMP] said
       'She$_i$ said that she$_{*i,j}$ went there.'

                     (Zu 2015b: ex.16)

Table 8.5 summarizes the pattern:

Table 8.5: Egophoric agreement

	ROOT DECLARATIVES	QUESTIONS	ATTITUDES
1 person	**ego**	non-ego	non-ego
2 person	non-ego	**ego**	non-ego
3 person	non-ego	non-ego	**ego**

Egophoric (=conjunct) agreement has a semantic dimension, which I argue makes it possible for them to shift in questions, in contrast with regular indexicals.[124] These forms indicate awareness and volition on part of the agent (analyzed as self-ascription by (Wechsler 2014, Wechsler forth.), while their non-ego counterparts signal the lack of intention, surprise, or

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124. It is likely that the so-called ego evidentiality in Tibetan (Garrett 2001)—markers that signal internal knowledge—is also am instance of egophoricity.

hindsight when used with first-person subjects, cf. similar effects with indirect evidentials used with first-person subjects (Curnow 2001). This is illustrated by a minimal pair from a Barbacoan language Tsafiki:

(410) Tsafiki (Barbacoan)

    a. First person subject: egophoric form
        la   ya=ka machite=chi   pore-**yo**-e
        I.M 3=ACC machete=INSTR cut-**EGO**-DECL
        'I cut him (intentionally) with the machete.'

    b. First person subject: non-egophoric form
        la   ya=ka machite=chi   pore-**i**-e
        I.M 3=ACC machete=INSTR cut-**NEGO**-DECL
        'I cut him (unintentionally) with the machete.'

                                    (Wechsler forth.: ex.19, from (Dickinson 2000: 387))

The kinds of semantic distinctions encoded by egophoric agreement indicate that this category is closely related to evidentiality.[125] It then comes as no surprise that egophoric forms participate in interrogative flip by being licensed in questions. This fact dovetails nicely with the claim I make about ordinary indexicals. They are used to talk about the circumstances of an utterance, and do not deal with epistemic states.[126]

8.5.3 Recap

I have argued that the shift in questions is driven by pragmatics. Given that any question is addressee-oriented, it is only natural for elements that talk about point of view to be able to shift. A pragmatic account correctly predicts that sometimes the shift would be optional.

    Evidentials, under the semantics that I put forth, deal with mental states. This makes them susceptible to shift, but does not explain the apparent lack of speaker-oriented readings. I dissect the conditions under which they could arise, and show that speaker-oriented readings are in conflict either (i) with the subjectivity of evidentials, or (ii) with the pragmatics of information-seeking questions. For the first case, I argue that it is impossible to ask a question that requests a reply based on your own evidence because evidentials deal with privileged information that nobody else has access to. For the second case, I argue that such interpretations may after all arise under the right pragmatic conditions in non-canonical questions, which are

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125. This raises the question of the overall relation between the categories of evidentiality and egophoricity. It is often argued that egophoricity should be distinct from evidentiality because not all languages with egophoric markers have grammatical evidentiality. However, this argument is paradigmatic. It is not clear whether there are deep semantic distinctions between the two categories. I do not address this question further and leave it for future research.

126. One may wonder whether susceptibility to the shift in questions may be due to morphosyntax. However, shifted indexicality may also surface as agreement (Tamil; Sundaresan 2012). Therefore, there must be something else that distinguishes between egophoric forms and regular indexicals.

not unbiased requests for information. This angle has not been brought up previously, and is not accounted for in theories that force evidentials to shift.

Finally, I argue that indexical pronouns are not subject to interrogative flip because they do not have an epistemic flavor, unlike many other elements that have the ability to shift in questions, including egophoric agreement. I further discuss that, given that indexical shift in attitudes independently requires monsters in the syntax, the same mechanism is likely unavailable in questions due to syntactic reasons.

8.6   General discussion

The goal of the present chapter and chapter 7 was to provide an analysis to the two kinds of evidential shift in connection with other shiftable phenomena. In contrast to the situation in attitude reports, which is subject to cross-linguistic variation, evidential shift in questions is a universal phenomenon. If an evidential in a given language can occur in information-seeking questions, it will be anchored to the addressee.

This generalization has been sometimes challenged in the literature, but under scrutiny all putative counter-examples lend themselves to an alternative explanation. For instance, it has been argued that speaker-oriented evidentials in questions may give rise to ignorance readings. I have re-analyzed such readings as resulting from the presence of indefinites, a cross-linguistically common way to signal ignorance on part of the speaker.

The literature on evidential shift focuses on the ways to derive the addressee-oriented reading. They fall into two classes: (A) indexical approaches that analyze evidential shift in questions as a variety of indexical shift, and (B) universal approaches that analyze evidential shift as an instance of interrogative flip, a dedicated mechanism, syntactic or semantic, that affects a plethora of perspective-sensitive phenomena. Universal approaches often postulate that the uniformity of shifting patterns extends to attitudes.

I demonstrate that these accounts over-generate: (A) indexical approaches incorrectly predict that indexicals may be able to shift in questions, which does not happen even in languages with indexical shift in attitudes, and (B) universal approaches incorrectly predict that perspective-sensitive phenomena form a natural class, while in fact they differ in whether the shift is obligatory or optional in questions and in attitudes, or in whether the shift is conditioned by the presence of specific attitude verbs.

I argue that the shift in questions, of evidentials and otherwise, is rooted in pragmatics. My view retains the intuition that different elements shift to the addressee in questions due to the same underlying cause, but does so without forcing them into homogeneity. This pragmatic approach further allows to make differentiated predictions for questions that have the same semantics, but not pragmatics.

I further focus on speaker-oriented interpretations and delineate two cases in which such readings could arise. In the first case, a speaker-oriented reading would signal that the speaker is not aware of their evidence and is requesting help figuring it out. I show that no dedicated mechanism of shift is needed to rule it out. This reading is impossible due to subjectivity, a property of evidentials independently motivated by the data from dialogues and attitudes.

Information-seeking questions thus constitute another environment where this property manifests itself.

In the second case, a speaker-oriented reading would signal that the speaker, based on their evidence, already knows the answer to the question or has an idea regarding it. Impossible in information-seeking questions, such readings are correctly predicted for non-canonical questions. In particular, evidentials can be anchored to the speaker in quiz questions, rhetorical questions and biased questions without creating a conflict with subjectivity. These novel data are problematic for theories that derive question shift as an intrinsic property of the syntax and/or semantics of evidentials.

Finally, I turn to indexicals and argue that they do not shift in questions because they are not about expressing a point of view and lack the semantic dimension targeted by the pragmatic shift in the first place. I thus resolve a long-standing puzzle on the indexical-evidential asymmetry by appealing to independently motivated constraints, and make a fundamental non-technical distinction between different classes of shiftable elements.

In this chapter, I show that less is more. The pragmatic approach to shift does not postulate a unified semantic and/or syntactic representation for perspective, and thus avoids overgeneration. At the same time, it makes a welcome prediction that the shift is not obligatory. In particular, evidentials may stay speaker-oriented under the right pragmatic conditions, which can be found outside of canonical questions.

Because I have argued that the questioner-questionee interaction is best analyzed in conversational pragmatic terms, a logical next step will be to develop a formal account rooted in the dynamics of dialogue and in general cognitive principles. This point is closely related to the agenda defended in the dissertation in general. By looking at the behavior of evidentials, I show that once the all-around understanding of the cognitive underpinnings of linguistic phenomena goes up, the semantic complexity of our analyses will go down.

CHAPTER 9

In lieu of a conclusion: To-do list

The dissertation makes a series of claims and predictions regarding the semantics of evidentials. The key idea is that evidentials in natural language describe first-person mental states, which explains their behavior in dialogues, attitudes, and questions. However, many issues pertinent to the semantics and pragmatics of evidentiality are not yet settled, because the empirical landscape has many gaps that are waiting to be filled. One of the goals of this dissertation was to identify those gaps.

Much of the current research, following the typological tradition, has a paradigmatic focus: it centers around evidentials that form a grammatical category. Despite some indications that it might be so, it is not clear whether the categorial status has an effect on semantics. One needs to look at two types of cases: grammatical manifestations of evidentiality that do not form a category (e.g. Tagalog *daw*), and lexical manifestations of evidentiality in languages like English (e.g. evidential adverbials). These cases will show what different expressions of evidentiality have in common semantically. A guiding parallel is recent research on modality and temporality in languages without respective grammatical categories.

One of the fundamental debates in the semantics of evidentials concerns the relation between evidentiality, epistemic modality, and speech acts. I have argued that none of the existing diagnostics in fact identifies evidentials as epistemic modals or as speech act modifiers (Chapter 2). To this end, I have proposed new diagnostics:

Assessment-sensitivity In Chapter 6, I suggest that assessment-sensitivity can be used as a theory-neutral property that defines epistemic modality as a semantic category. This property determines the patterns of disagreement and retraction, and scenarios featuring them should be used to pinpoint (dis)similarities between evidentials and epistemics. In light of the indirectness requirement associated with *must*, of special interest will be the behavior of inferential evidentials. Until new data from such tests become available, modal analyses of evidentiality are not justified empirically, even though it is possible to treat evidentials as dealing with beliefs in view of some body of knowledge.

Discourse commitments In Chapter 2, I suggest that discourse commitments can be used as a theory-neutral property that defines speech acts. It will take time to develop scenarios probing the presence of such commitments with evidentials. Until such new data become available, illocutionary analyses of evidentiality are not justified empirically, even though it is possible to treat evidentials as dealing with communicative intentions.

In Chapter 4, I have discussed the behavior of evidentials in dialogues. It has been argued elsewhere that evidentials contribute not-at-issue content. I have shown that the impossibility of direct denials is not unique to NAI, and have proposed a subjective analysis, which explains

the similarities between evidentials and e.g. pain reports. To defend or refute the NAI view on evidentiality, other diagnostics of discourse status should be used. In particular, one needs to further look at different types of denials and at different types of behavior with respect to propositional anaphora.

On a related note, evidentials have been often treated as contributing a type of projective content. One of the empirical arguments for this view has been their behavior with respect to clause-mate negation: evidentials always outscope it. Appendix D to Chapter 4 shows that projection is not the only possible explanation of the pattern, and offers a number of alternative solutions. To determine whether evidentials project, one needs to look at external negation and conditionals.

Understanding what happens in conditionals is closely related to looking at evidentials in clausal adjuncts, e.g. purpose and causal clauses. While little is known specifically about evidentials in such environments, there is a lot of cross-linguistic research on the syntax and semantics of subordination. These environments would be helpful in discerning what in the behavior of evidentials is due to their morphosyntactic category.

The same holds for embedding under attitudes. Chapter 3 states that embeddability depends on the category of the embeddee and the availability of suitable embedders in a given language. This prediction should be tested across languages.

Another underexplored area is the compatibility of evidentials with different attitude predicates. There are several ways to classify those predicates, e.g. with respect to which types of complements they take or with respect to the licensing of epistemic modals. Each theory of evidentiality makes specific predictions as to what should happen in attitudes (even though they are rarely spelled out). These predictions should be tested.

Chapter 7 discusses evidential shift in attitude reports. For a complete picture of shift, it is necessary to look at multiple embedding (because such environments show which parameters shift together), at relative clauses (because in such environments, many elements do not shift), and attitudinal environments without an overt attitudinal operator, such as Free Indirect Discourse (because such environments highlight that shiftable elements are not homogeneous).

Chapter 8 addresses evidential questions. The analysis I put forth predicts that non-canonical questions allow evidentials to stay speaker-oriented. This prediction is borne out for at least Bulgarian and Turkish. To further test it, one needs to first identify strategies related to expressing epistemic bias in respective languages.

Another area to look at is the interaction between evidentials and question-embedders. The latter are known to fall into several classes with respect to what types of embedded questions they can license. The distribution and interpretation of evidentials under such predicates can thus serve as a testing ground for disentangling semantics and pragmatics.

Finally, as discussed in Appendix E to Chapter 5, the fundamental notion 'information source' requires refining. It can be done by using what is known about perception and inference, as well human reasoning in general, and determining the extent to which these cognitive processes constrain the language that describes them.

Overall, answering the open questions on the agenda above will lead to a more articulated conceptualization of the phenomenon of evidentiality.

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