The subjective heart of evidentiality

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July 2019

Abstract   This paper develops a novel account of evidentials as self-ascriptions of a mental state and places them in a larger context of subjective expressions. I argue that this account explains in a principled way several patterns that characterize the behavior of evidentials cross-linguistically: (i) speaker-oriented interpretations in root declaratives; (ii) resistance to direct denials in dialogues, (iii) obligatory *de se* construal in attitudes, and (iv) lack of speaker-oriented interpretations in information-seeking questions. Those patterns have been viewed as unrelated, or have not even been discussed, in the previous literature. I propose that they are rooted in subjectivity, and derive the linguistic behavior of evidentials from the interaction of their conventional meaning and the properties of cognitive processes they describe. In addition to providing a uniform solution to the known puzzles, I further demonstrate that the subjective account makes correct new predictions not made by previous analyses of evidentiality.

Keywords   evidentiality, de se, subjective language, cross-linguistic semantics

1   Introduction

Evidentials are expressions that signal the source of the semantically determined information conveyed by an utterance (Willett 1988; Rooryck 2001a,b; Aikhenvald 2004; de Haan 2013b,a). The Cuzco Quechua evidential paradigm in (1), now a classic example in the semantic literature, illustrates three types of information source commonly expressed by evidential markers across languages.

(1)   Cuzco Quechua (Quechuan; Peru)

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

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

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

The sentences in (1) talk about the proposition 'It is raining'. Following (Murray 2010 et seq.), I will refer to it as the *scope proposition* (also called the *embedded proposition* and the *prejacent* in the literature). Evidential clitics *=mi, =si* and *=chá* signal the way the speaker learned the scope proposition: firsthand as in (1a),[1] via hearsay as in (1b), or via inference as in (1c).[2] Throughout the paper, the contribution of evidentials will be translated using parentheticals.

Following the seminal work of Izvorski (1997), evidentiality has received substantial attention within formal semantics. In the past decades, a lot of discussion centered on the issue of heterogeneity in the evidential domain. According to one strand of research (Faller 2002, 2007; Matthewson et al. 2007), the observed cross-linguistic

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1. The gloss for *=mi* in (1a) is a simplification. The meaning of the morpheme is broader than firsthand perceptual evidence, but this issue is orthogonal here.

2. Conjectural and inferential evidentials are often translated with the help of modalized propositions, such as *must be raining* in (1c). This convention does not have a theoretical status here, though it does for e.g. Faller (2002) and Murray (2017).

variation in evidentiality can be traced to the underlying *semantic* distinction between the two classes of evidentials: (i) modal ones, understood as garden variety epistemic modals (Izvorski 1997; Matthewson et al. 2007; McCready and Ogata 2007; Peterson 2010; Lee 2013 a.o.), and (ii) illocutionary ones, understood as dealing with the structure of speech acts (Faller 2002; Portner 2006; Davis et al. 2007; Murray 2010, 2017 a.o.). However, as discussed in detail in (Korotkova 2016), the variation in evidentiality is not uni-dimensional and therefore cannot be attributed to a single factor. Furthermore, there is little empirical support for genuinely semantic variation. For example, the ability of evidentials to appear in complement clauses, which varies across languages, is due to the syntax of clausal complementation rather than the putative distinction between modal and illocutionary evidentials (Korotkova forth). Currently, based on the mounting body of cross-linguistic data, there is a growing consensus in the field that evidentials can be attributed a unified semantics across languages (Matthewson 2011, 2012; Murray 2010, 2017). In this paper, I continue the tradition of uniformity.

Based on the data from a range of languages, the paper advocates a semantics for evidentials as self-ascriptions of a mental state. Throughout the paper, I will illustrate each claim with an example from one language. More data are in the appendix, along with a questionnaire on evidential subjectivity. The main ingredients of the proposal are the mental state component and the first-person component. The mental state component determines the evidence type signalled by the evidential and is formalized using standard semantics for propositional attitude predicates. The first-person component determines the individual whose evidence is at stake in a given environment and is formalized using Hacquard's (2010) system of individuals-qua-events. Following Garrett (2001), the evidence holder will be referred to as the *Origo*, using the term originally proposed in the literature on deixis (Fillmore 1971; Lyons 1977).

This semantics puts evidentials in a larger context of expressions that I will call *subjective*—expressions that describe self-knowledge, privileged information about oneself. In general, self-knowledge resists third-party assessment. I argue that this fundamental non-linguistic property constrains the linguistic behavior of subjective expressions and that subjectivity is responsible for the following three patterns that characterize evidentials across languages.

First, it is well-known that evidentials resist direct denials in dialogues—one can disagree with the scope proposition, but not with their interlocutor's having evidence for it. This pattern, due to its similarity to the behavior of presuppositions, has been previously attributed to the peripheral discourse status of the information contributed by evidentials. I argue that instead it is due to the fact that only the origo has access to their evidence. I show that disagreement with evidentials is typically infelicitous regardless of the linguistic form of denial, which is correctly predicted by the subjective account but not by previous analyses.

Second, as has been noted for many languages, the origo in attitude reports is the attitude holder. In addition, the origo has to be construed *de se*, namely, the origo has

to be consciously aware of their own evidence. The obligatory *de se* construal has not been discussed before and thus is not captured by previous approaches to evidentiality. The formal analysis that I propose, on the other hand, provides a straightforward account of the property.

Third, evidentials in information-seeking questions are subject to the so-called interrogative flip—the origo is the addressee, not the speaker. Previous solutions attribute the flip to an obligatory syntactic and/or semantic mechanism. Instead, I argue that the flip is pragmatic and affects a range of point-of-view phenomena. I show that evidentials are incompatible with speaker-oriented readings in information-seeking questions. I argue that such readings would amount to the origo not having access to their epistemic state. I further show that the subjective account, but not previous analyses, correctly predicts the behavior of evidentials in questions that do not require the speaker's ignorance about the answer, including exam questions and biased questions.

Summing up, the paper derives several patterns in the linguistic behavior of evidentials from the interaction of their conventional meaning and the properties of cognitive processes they describe. It argues that subjectivity restricts the range of possible interpretations of evidentials across a variety of environments, and provides a principled explanation of the patterns that have not been seen as related, or have not been discussed, in the literature. Not only does the subjective account provide a uniform solution to the known puzzles, but it also makes correct new predictions not made by previous analyses of evidentiality.

The paper is structured as follows. Section 2 lays out the subjective view on evidentiality and the formal proposal. Section 3 discusses the behavior of evidentials in conversations and shows that subjectivity, but not previous approaches, captures the fact that evidentials resist denials in any form. Section 4 focuses on the behavior of evidentials in attitude reports. Section 5 is on evidentials in questions. Section 6 concludes.

2   A subjective account of evidentiality

The central claim of this paper is that evidentials are self-ascriptions of a mental state and that a range of their linguistic properties can be derived from the properties of cognitive processes they describe. In this section, I introduce the notion of subjectivity I am using, discuss different types of subjective expressions and how evidentials fit in, and put forth a formal proposal that accounts for the behavior of evidentials across linguistic environments.

2.1   Self-knowledge and subjective language

It is widely agreed in philosophy that self-knowledge—knowledge of one's mental states—is special (see discussion and references in Gertler 2011, 2017). The way we

know are own perceptual experiences, beliefs, or desires is different from how we know other things in the world, including mental states of others. For concreteness, we can say that self-knowledge is special because the knower has privileged access to certain types of information about oneself and therefore enjoys a distinguished epistemic status.[3] Others, on the other hand, do not have such access, as mental states are not amenable to direct third-party assessment. For example, I am the only one who knows my current thoughts. Likewise, the waiter wouldn't know, without inquiring, what kind of Puerh I wish to order. Same with pain, traditionally understood as a mental state (Aydede 2013). The best way to learn if somebody is in pain is to ask, hence self-assessment pain questionnaires in medical practice.

I will refer to linguistic expressions that describe first-person mental states as *subjective*. This class includes a variety of expressions, including but not limited to, first-person statements with psych predicates (*I am delighted*), first-person attitude reports (*I hope*), or first-person bouletic statements (*I wish*). Similarly to the self-verification of explicit perfomatives such as *I promise* (Searle 1989; Condoravdi and Lauer 2011), subjective expressions are typically true if uttered sincerely, as in *I want to go on vacation*. Just like with performatives, subjectivity only characterizes first-person uses of the expressions above, and *Mandy wants to go on vacation* will have regular truth conditions.[4]

Cognition constrains language: some features of the linguistic behavior of subjective expressions are due to the nature of content they describe. For example, as evidenced by the oddness of (2), self-attributions are typically immune to correction (see detailed discussion in Section 3).[5]

(2)   A.   I wish my grandparents were alive.
      B.   # No, you don't.

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3. This is just one view on self-knowledge, and nothing hinges on it here. My claims about the linguistic behavior of certain expressions are compatible with many theories of self-knowledge as long as it is construed as special in some way, an idea accepted by most philosophers.

4. The expressions listed here are called *avowals*, present-tense self-attributions of a mental state (see Bar-On 2004 for discussion). However, the term *subjective language* is broader. It refers to first-person content in general, and covers linguistic constructions that would not be classified as avowals, such as attitudes *de se* or epistemic modals. This distinction matters especially when it comes to semantics. Avowals are intrinsically linked to assertion, and other subjective expressions are not. One could argue that subjective expressions constitute avowals in root declaratives, but an account is still needed for their uses elsewhere, in particular, in attitude reports, an environment that most analyses of avowals are not designed to deal with.

5. Subjective expressions may not be homogeneous. For example, intentions are more likely to be challenged or doubted than sensations (Wright 1998; Bar-On 2004). However, the main point here is about an asymmetry. Self-knowledge is associated with higher epistemic security than other types of knowledge, and subjective expressions as a class enjoy higher immunity to correction than ordinary statements.

Furthermore, grammar can conceptualize self-knowledge in a special way. One well-known case is person restrictions with the so-called experiencer predicates in Japanese, which describe feelings and internal states (Kuroda 1965; Hashimoto 2015). Unmodified, they talk about the speaker in root declaratives (3a). A marker of indirectness or quotation has to be used to talk about someone else (3b).[6]

(3) Japanese (isolate; Japan)

    a. watashi-wa onaka-ga   suita   [FIRST PERSON]
        I.F-TOP   stomach-NOM hungry.PST
        'I am hungry.'

    b. John-wa onaka-ga   suita   *(soo-da)   [THIRD PERSON]
        John-TOP stomach-NOM hungry.PST REP-COP.PRES
        'John is hungry, I hear.'

Another example of special grammar for self-knowledge comes from egophoric agreement, verbal marking that denotes intentional actions (Coppock and Wechsler 2018; Floyd et al. 2018; Zu 2015, 2018). In root declaratives, egophoric forms can only be used with first-person subjects (4a). Non-egophoric forms are used with other types of subject (4b).[7]

(4) Newari (Tibeto-Burman; Nepal)

    a. ji ana   wan-ā   [FIRST PERSON]
        I there go-PST.EGO
        'I went there.'

    b. wa   ana   ✓wan-a/*wan-ā   [THIRD PERSON]
        (s)he there go-PST.NEGO/go-PST.EGO
        '(S)he went there.'   (adapted from Zu 2015:156)

I propose that evidentials, too, encode self-knowledge and belong to the class of subjective expressions. The crux of this proposal is the idea that the origo is in a special position to access their evidential state, while others are not. The motivation for this view comes from the behavior of evidentials across a range of environments. Overall, evidentials cannot be used to attribute evidence to a third party, nor can a third party be in a position to correct or assess the origo's evidence. For example, a third party cannot challenge the origo's evidence in dialogues (Section 3). In attitudes, evidentials can only be used if the origo is consciously aware of their evidence (Section 4). And in information-seeking questions, evidentials cannot be used to inquire about one's own

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6. Unless indicated otherwise, data come from my work with consultants.
7. Non-egophoric forms are allowed with first-person subjects under special pragmatic conditions such as surprise.

evidence (Section 5). As I argue throughout the paper, subjectivity explains those patterns in a uniform way. In contrast, most current theories of evidentiality treat the origo's evidence as an objective fact up to evaluation by third parties.[8] As a result, those theories fail to predict both the observed patterns and the connection between them.

One of my central assumptions is that evidentials describe cognitive processes. This idea is fairly intuitive for inferential and conjectural evidentials. Perceptual experiences, too, are typically construed as mental states (though see Orlandi 2014). But what about hearsay? One can imagine that different individuals can have the same access to a report about p. In this case, hearsay evidence should be regarded as an objective fact. However, as I will argue throughout the paper, the grammar treats hearsay evidentials on a par with non-hearsay ones (cf. also discussion in (Faller 2011) on the unified treatment of all evidentials). For example, a third party cannot use a hearsay evidential to attribute evidence to the origo, which shows that having hearsay evidence is conceptualized as a subjective experience rather than as an objective fact.

Furthermore, it is well-known that the mapping between different evidence types and evidential markers is not straightforward (Faller 2002; Krawczyk 2012; McCready 2015 a.o.). In addition to information source, the choice of an evidential in a given language can depend on such factors as the origo's confidence or the reliability of evidence. In Cuzco Quechua, the direct evidential can also signal trustworthy reports, even though the language has a hearsay evidential (Faller 2002). In Bulgarian, the indirect evidential cannot be used to signal inference from observable results—its typical use—if the origo knows that they can be hallucinating (Smirnova 2012). In Tibetan, one of the direct evidentials is used for observable results, even though the language also has a general inferential (Kalsang et al. 2013). Those examples suggest that evidentials are not mere expressions of information source (pace Aikhenvald 2004) and that the origo always reasons about their evidence. To this end, Krawczyk (2012) argues that all evidentials encode a form of reasoning. This drives my point home: evidentials encode mental states.

In this paper, however, I will not say much about the nature of mental states described by evidentials and will concentrate on the first-person aspect. It will be sufficient to say that reasoning about evidence can be treated as having a propositional attitude. I will show that we get can a lot of mileage out of this analysis. In the next section I turn to the relation between evidentials and other subjective expressions.

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8. One exception is (Faller 2002). Faller treats evidentials roughly as avowals (she uses different terminology—*mental perfomativity*—and does not discuss the philosophical research on self-attribution). However, this property does not play a role in explaining the patterns that I derive from subjectivity. It is only used to account for the limited distribution of evidentials, which in some cases is best explained syntactically (Korotkova forth.).

2.2 The nature of the origo

It has often been noted that subjective expressions do not form a homogeneous group (cf. Moltmann 2012). Some are more like *I*, and some, using Weatherson and Egan's (2011) analogy, are more like *we*. I will argue that evidentials are always autocentric and in root declaratives, they are more like *I*.[9] To this end, consider the following property, illustrated in (5)-(6). Evidentials are always speaker-oriented in root declaratives and cannot be used to talk about someone else's evidence, even the licensing conditions are otherwise met (see Şener 2011; Meriçli 2016 on the licensing of *miş* and McCready and Ogata 2007; Davis and Hara 2014 on *youda*):[10]

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9. Most theories of evidentiality simply assume that evidentials are always speaker-oriented in root declaratives, but they do not provide evidence for it, and data such as (5)-(6) have not been brought up in the previous literature.

10. A potential counter-example to my claim comes from St'át'imcets inferential *k'a*. Consider the following sentence (based on von Fintel and Gillies 2008a:83):

(i) St'át'imcets (Salish; British Columbia, Canada)

Context: Imagine a game where someone places some different coloured pegs behind a screen and the other person has to guess the colours and the order after getting some clues.

a. *After some rounds where I give my son some hints about the solution, he says:*

wá7 k'a i tseqwts´qw-a
be INFER DET.PL red-EXIST
'There might be some reds'.

b. *My reply:*

wenácw; wá7 k'a
true be INFER
'That's true. There might be.'   (adapted from Matthewson et al. 2007:223)

This example *could* be taken to demonstrate that *k'a* is not speaker-oriented because the speaker in fact knows the solution (Matthewson et al. use it to show that the modalized proposition can be agreed with). However, I propose an alternative explanation. Inferential evidentials do not semantically encode lack of direct evidence, just like direct evidentials do not semantically encode lack of other evidence. Instead, the choice between different evidentials is driven by pragmatic reasoning and has been analyzed as a scalar phenomenon: one does not typically use an inferential evidential when having full knowledge for the same reasons one does not always use *some* when *all* can be used (Faller 2012, Peterson forth.). However, in the context of playing Mastermind usual pragmatic considerations are suspended, and players may withhold information without lying. Coming back to (i), the speaker should be able to use *k'a* as long as they have inferential evidence for the position of the pegs (thus satisfying the lexical requirement of the evidential) even though they could have made a stronger statement. Therefore I do not consider (i) as evidence against my claim. Generally, such examples have not been tested systematically across languages, and more fieldwork is needed to draw any definitive conclusions.

(5) Turkish

✓Context 1: I am in an escape room. A team member tells about the clue. I say:

#Context 2: I have designed a new escape room and am testing it. I am watching a muted video of a team of people inside. After talking to a team member, one person suddenly rushes to a far left corner. I think that that person was told that a clue is in that corner (which is incorrect, as I know the plot and that the clue is not there). I say:

ipucu	sol	köşe-dey-**miş**	[HEARSAY]
clue	left	corner-LOC-IND	

'Given what is said, the clue is in the left corner'

(6) Japanese

✓Context 1: I am in an escape room and reason that a clue is the left corner. I say:

#Context 2: I have designed a new escape room and am testing it. I am watching a fragment where one person suddenly rushes to a far left corner. I think that that person must have reasoned that a clue is in that corner, but I know it is not there, it was designed to be misleading. I say:

# mono-wa	hidari-hashi	ni	aru	**youda**	[INFERENCE]
object-TOP	left-corner	LOC	be	INFER	

Intended: 'Given the inference, the clue is in the left corner'

Note that the infelicity in Context 2 in (5) and (6) is due precisely to perspectival anchoring. The relevant evidence requirements are satisfied and the sentences are felicitous in the corresponding speaker-oriented scenarios in Context 1.

The data in (5)-(6) help to delineate the space of analytical options suitable for evidentials. At first blush, evidentials look similar to bare uses of epistemic modals (*might, must*). Just like there is no overt knower with *might*, there is no overt origo in evidential statements (see, for example, discussion in (Kalsang et al. 2013) on the argument structure of evidentials in Tibetan). And short of using clause-mate intensional operators such as *according to X* or *in X's opinion*, it is not possible to make the knower or the origo explicit in root clauses. Furthermore, there is a tradition to treat evidentiality as a subcategory of epistemic modality (Bybee 1985) and to analyze evidentials as vanilla epistemic modals (Izvorski 1997; Matthewson et al. 2007; McCready and Ogata 2007 a.o.). However, there is an important difference that has to be taken care of in semantics.

It has been known at least since Hacking (1967) that epistemic modals allow non-autocentric readings even in root declaratives; see discussion in (von Fintel and Gillies

2008b, Yanovich forth.).[11] For example, one can utter *The clue might be in the left corner* in Context 2 in (6), even though the speaker's knowledge excludes this possibility (pointed out by Egan et al. (2005) for a similar scenario, though see Knobe and Yalcin 2014). Therefore, one cannot adopt wholesale the machinery used for epistemics to give an account of evidentials. Thus, accounts in (Matthewson et al. 2007; Peterson 2010; Lee 2013), which treat evidentials as pure Kratzerian modals, overgenerate because their semantics does not rigidly determine the origo (Kratzer 1977, 1981, 1991). More generally, evidentials do not need any machinery that allows non-autocentric readings.[12] Summing up, the origo and the knower of epistemics are not the same thing, albeit the categories of evidentiality and epistemic modality can be related (see discussion in Matthewson 2012).

One possible approach is that the origo is simply the indexical pronoun *I*, which is always speaker-oriented in root clauses (unless bound; Kratzer 2009). However, the similarity between the origo and *I* does not extend beyond root declaratives. Consider the following data from attitudes (7a) and questions (7b):

(7) Standard Tibetan (Tibeto-Burman; Tibet, China)

a. bkra.shis [kyis khong phyin **song**] bsams kyi yod   red [ATTITUDE]
    Tashi   ERG 3   go.PST DIR   think IPFV EXIST IND
    'Tashi thinks that, given his own perceptual evidence, she went.'
    (adapted from Muñoz 2019:7)

b. bkra.shis za.khang-la   phyin-**song**-ngas   [QUESTION]
    Tashi   restaurant-LOC go-DIR-Q
    'Did Tashi go to the restaurant, given your perceptual evidence?'
    (adapted from Garrett 2001:228)

The data above represent a robust cross-linguistic pattern. In attitude reports the origo is anchored to the attitude holder that has to be construed *de se*. In information-seeking questions the origo undergoes "interrogative flip" and shifts to the addressee. In order to account for (7a), one can argue that the origo is a shiftable indexical (cf. Korotkova 2015), in parallel to languages where *I* can refer to the attitude holder (Schlenker 2003; Deal 2017 a.o.). However, (7b) is problematic for any indexical analysis (such as Lim and Lee 2012; Murray 2012a), given that *I* does not shift in questions even in those languages where it shifts in attitudes (see discussion in Section 5). Therefore, the origo is not an indexical.

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11. A similar situation holds for taste predicates such as *delicious* (Lasersohn 2005; MacFarlane 2014) and appearance claims such as *looks like* (Rudolph 2019). While there is always a taster and an experiencer, respectively, the grammatical form may not specify who that individual is.

12. Here is a non-exhaustive list of proposals designed to account for non-autocentric readings of epistemic modals: group-relativity (DeRose 1991; von Fintel and Gillies 2008a, 2010, 2011), dependence on the circumstances of evaluation rather than the context of utterance (Egan et al. 2005; Stephenson 2007a; MacFarlane 2014), or having no individual at all in the semantic denotation (Yalcin 2007).

Another option is that the origo is the *judge* (McCready 2010; Bylinina, Sudo, and McCready 2014). Judges have been originally proposed by Lasersohn (2005) for the covert taster of taste predicates to account for the fact that the taster is not always the speaker. For example, taste predicates can be used to talk about something that the speaker has no intention of trying, as in (8) (cf. Egan et al. 2005:150 and Stephenson 2007a:498):

(8)   Taste of the Wild Dry Dog Food is delicious and an absolute health bomb.
                                    (http://peanutpaws.com/best-dog-food-for-bulldogs/)

Furthermore, patterns of disagreement with taste predicates show that bare statements (9), in contrast to statements with overt tasters (10), are not simply about someone's private gustatory judgment (Kölbel 2003).

(9)   a.   Lapsang Souchong is delicious.
      b.   No, it isn't.

(10) a.   Lapsang Souchong is delicious to me.
      b.   #No, it isn't.

Based on data in (9) taste predicates are often argued to have a generic, or normative, component (Bhatt and Pancheva 1998; Anand 2009; Moltmann 2012; Pearson 2013a; MacFarlane 2014). Evidentials, on the other hand, always talk about the speaker's evidential state (5 and 6), which shows that they are not generic. Thus, treating the origo as a judge simply makes incorrect predictions about the behavior of evidentials. Furthermore, analyzing evidentials as judge-dependent is conceptually misguided. Judges were originally proposed for formalizing personal taste. Used in a theory-neutral way, this concept is associated with other matters of opinion, such as appearance, morality and normativity (see discussion in Sæbø 2009; Coppock 2018). However, whether I have perceptual or any kind of evidence for my claim is not up to debate in the same way as, say, the immorality of particular law is.

We have seen that the origo behaves differently from the epistemic knower, from rigid and shiftable indexicals, and from the judge. The pattern in (7) is not unique to evidentials, and in fact characterizes many natural language expressions that talk about the self, including Japanese experiencer predicates and Newari egophoric agreement, discussed in 2.1. Such expressions are speaker-oriented in root declaratives, shift to the attitude holder in attitude reports, and to the addressee in information-seeking questions. To this end, there are proposals that provide a unified account for the self and perspective in the grammar (Speas and Tenny 2003; Tenny 2006; McCready 2007; Pearson 2013b; Sundaresan and Pearson 2014; Woods 2014; Sundaresan 2018b; Zu 2018 a.o.). In particular, it has been argued that self-reference is

tied to a specific structural configuration, and that both types of shift, in attitudes and in questions, are two sides of one coin. I argue that the shifts are in fact of different nature.

The shift in attitudes is due to intensional quantification. It is well-known that the default behavior of various world-sensitive expressions in the syntactic scope of an attitude predicate is to shift (Farkas 1997; Percus 2000). There are several exceptions—for example, indexical pronouns, appositives, and *de re*—but for each case, some additional technology is needed. Thus, indexicals in languages like English are often treated as rigid designators to make sure that *I* refers to the speaker, and not the attitude holder, when embedded (Kaplan 1989). Appositives and other supplements are often speaker-oriented even in attitudes, and this default interpretation is achieved via projection (Potts 2005). And the proper analysis of *de re* requires a dedicated mechanism to guarantee that the noun phrase read *de re* is interpreted with respect to the matrix world while being in the scope of the attitude verb (Charlow and Sharvit 2014). Again, none of this is needed to account for shifted readings. Summing up, evidential shift in attitudes in and of itself is unremarkable in terms of semantic composition. What does require a special account is *de se*, a property of evidentials that has not been previously brought up and that I discuss in Section 4.

The shift in questions is due to a general pragmatic mechanism, as I will argue following Garrett (2001). I will show that theories hard-wiring the shift to syntax and/or semantics undergenerate and fail to predict the behavior of evidentials in non-canonical questions (Section 5). To this end, evidential shift in questions is also unsurprising, but it does not require a structural account.

My larger point is as follows. There are many linguistic expressions that talk about opinion and knowledge, and are therefore related conceptually. Evidentials fall squarely into this group. However, there is no evidence that the grammar has a uniform blueprint for all of them. From the semantic standpoint, I have shown that the origo is not the same as the knower of epistemics, the taster of taste predicates, or the indexical pronoun *I*. In general, there is no semantic homogeneity in the perspectival domain; see Podobryaev (2017) on diversity in personal indexicals, (Anand 2006) on multiple routes to *de se*, and (Jaszczolt and Huang 2018) on different types of first-person expressions. In order to understand how the origo of evidentials is connected to those expressions, more research is needed. In particular, one needs to study the interaction of first-person expressions and evidentials, as it has been done, for example, in (Anand and Korotkova 2018) for taste predicates and markers of indirectness. I leave a thorough investigation of this issue for future research.

Likewise, take syntax. There is a growing body of evidence that evidentials are located high in the clausal spine, coming, for example, from their behavior in root

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clauses (Simeonova and Zareikar 2015; Bhadra 2018; Irimia 2018) and their distribution in clausal complements (Murray 2016, Korotkova forth.). This is consistent with the idea that perspectival information, if represented in the syntax at all, occupies topmost projections (Speas and Tenny 2003; Speas 2004, 2010; Shklovsky and Sudo 2014; Sundaresan 2018b; Zu 2018 a.o.). However, it is not a given that perspective has a unified syntax. Zu (2018) proposes a more nuanced account and argues for an implicational hierarchy between different perspectival phenomena based on their syntactic distribution. She also shows that the achor of perspectival expressions is distinct from discourse participants. I do not exclude the possibility that the origo occupies the syntactic position called the Seat of Knowledge, which Zu argues to be the highest in the implicational hierarchy of perspectives. However, because there is not enough evidence to pinpoint the exact syntactic position of evidentials (Korotkova forth.), I do not make any definite claims about the syntax of evidentiality and do not endorse any syntactic analysis on the nature of the origo (pace Speas 2004, 2010).

My goal in this paper is to provide a working analysis for the semantics of evidentials, and the next section lays out the framework and the proposal. Should more data on the syntactic position of evidentials become available in the future, the semantic view that I advocate can be supplemented with a more articulated syntactic proposal.

2.3 Formal proposal

I argue that evidentials are event relative and that the origo is the unique holder of an event the evidential is relativized to. In root declaratives, it will be the speech event, whose holder is the speaker. In attitude reports, the relevant event will be the event described by the attitude verb, whose holder is the attitude subject. In questions, the speech event can be the event of asking or the event of answering, and the holder will be the speaker or the addressee, respectively. As I will argue in detail in Section 5, the behavior of evidentials in matrix questions is best understood in pragmatic, rather than structural, terms, and the fact that the origo is not uniquely defined in questions is a welcome result.

My proposal is an adaption of Hacquard's (2010) view on epistemic modality. The gist of Hacquard's proposal is as follows. All modals are event relative and events are overtly represented in the syntax. Following (Farkas 1997) and (Percus 2000) on worlds, Hacquard posits that all event variables are bound by the closest possible binder. In line with (Cinque 1999), Hacquard proposes that there are low root modals[13] and high epistemic modals. Low modals are above VP and are bound by the event e_1 introduced by aspect of the main predicate (11). High modals are above TP and are bound by the speech event e_0 in root clauses (12). In attitude reports, high modals are bound by the event e_1 introduced by aspect of the attitude verb (13) (atti-

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13. Root modality is an umbrella term that covers different non-epistemic flavors such as ability, circumstantial and deontic modality.

tude verbs are also treated as predicates of events, as all predicates in the Davidsonian tradition).

(11) $[_{CP} \, \lambda e_0 \, e_0 \, [_{TP} \, \text{T Aspect}_1 \, \text{Modal}_{\text{ROOT}} \, e_1 \, [_{VP} \, \text{V} \, e_1 \,]\,]\,]$ [ROOT]

(12) $[_{CP} \, \lambda e_0 \, \text{Modal}_{\text{EPIST}} \, e_0 \, [_{TP} \, \text{T Aspect}_1 \, [_{VP} \, \text{V} \, e_1 \,]\,]\,]$ [EPISTEMIC]

(13) $[_{CP} \, \lambda e_0 \, \text{T Aspect}_1 \, \text{Att}$ [EPISTEMIC IN ATTITUDES]
$\quad\quad\quad [_{CP} \, \text{Modal}_{\text{EPIST}} \, e_1 \, [_{TP} \, \text{T Aspect}_2 \, [_{VP} \, \text{V} \, e_2 \,]\,]\,]\,]$

The main goal of Hacquard'd system is to explain how the same word, such as *have to* in (14), can receive a different interpretation while maintaining a unified semantics for modality, and this is achieved via event relativity. Each event has a running time, which determines the modal's temporal orientation, and a holder, which determines the individual it is relativized to. Thus, low modals are anchored to the verbal time and one of the verb's arguments (14a). High modals, on the other hand, are anchored to the speech time and to the speaker (14b). This ensures that *have to* receives a root interpretation when it is introduced low in the structure and an epistemic interpretation when it appears high.

(14)   a.   Alex **had to** take pills daily (given his circumstances at the time). [ROOT]
      b.   Alex **had to** be smart (given what is known now).   [EPISTEMIC]

Recently, this proposal for epistemics has been criticized on two grounds. First, epistemics across languages can scope under tense (see Rullman and Matthewson forth. and references therein), which suggests that they are not always base-generated above T. Second, as discussed in 2.2, epistemics aren't always relativized to the speaker in root declaratives. Those observations show that Hacquard's original semantics may not be a good fit for epistemics. However, this issue is irrelevant here. I argue that Hacquard's proposal, and the individual-qua-events mechanism in particular, is in fact well-suited to capture the behavior of evidentials and the reference of the origo.[14]

Hacquard uses an extensional framework in order to connect syntactic height and modal flavor. For my purposes, the choice between an extensional vs. an intensional system is mainly a matter of notation, and for the sake of simplicity of representation I will use an intensional framework. Another reason for doing so is an account of *de se* (Section 4). An intensional system, unlike unmodified Hacquard's framework, is well-equipped for handling the obligatory *de se* construal of the origo.

I will assume that the interpretation function is relativized to a context *c*, an index *i* and an assignment *g*. A context specifies the circumstances of an utterance, such as

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14. I will not talk about tense in this paper. However, evidentials in many languages have been argued to be anchored to speech time in root declaratives (see (Matthewson and Hirayama 2019) for an overview), which is consistent with the analysis I put forth.

who is speaking, to whom, where or in what world (Kaplan 1989). An index specifies the circumstances of evaluation and is treated as a pair that contains an event and a world.

(15) $[\![\cdot]\!]^{c,\langle e,w\rangle,g}$

The rules of semantic interpretation are given in (16):

(16) a. **Functional Application** (FA)

   If α is a branching node and $\{\beta,\gamma\}$ the set of its daughters, then, for any context c, index $\langle e,w\rangle$ and assignment g: if $[\![\beta]\!]^{c,\langle e,w\rangle,g}$ is a function whose domain contains $[\![\gamma]\!]^{c,\langle e,w\rangle,g}$, then $[\![\alpha]\!]^{c,\langle e,w\rangle,g} = [\![\beta]\!]^{c,\langle e,w\rangle,g}([\![\gamma]\!]^{c,\langle e,w\rangle,g})$
   (notational variant of Heim and Kratzer 1998:XXX)

   b. **Intensional Functional Application** (IFA)

   If α is a branching node and $\{\beta,\gamma\}$ the set of its daughters, then, for any context c, index $\langle e,w\rangle$ and assignment g: if $[\![\beta]\!]^{c,\langle e,w\rangle,g}$ is a function whose domain contains $\lambda e'.\lambda w'.[\![\gamma]\!]^{c,\langle e',w'\rangle,g}$, then $[\![\alpha]\!]^{c,\langle e,w\rangle,g} = [\![\beta]\!]^{c,\langle e,w\rangle,g}(\lambda e'.\lambda w'.[\![\gamma]\!]^{c,\langle e',w'\rangle,g})$
   (notational variant of von Fintel and Heim 2011:25)

Because an event provides both a time (its running time) and an individual (its holder), this view does not lose anything compared to the more standard view on indices as world-time-individual triples. At the root level the index will contain the speech event e_0 and the world of evaluation w_0. Intensional operators, including evidentials and attitude verbs, are treated as quantifiers over indices (cf. the tradition of analyzing all attitudinal complements as quantifiers over objects more fine-grained than worlds; Schlenker 2003; Anand and Nevins 2004; Stephenson 2007a, 2010; Grønn and von Stechow 2010; Pearson 2015, 2016 a.o.).

The system I propose synthesizes approaches to epistemic modality proposed by Hacquard (2006, 2010) and Stephenson (2007a,b). As discussed above, event relativity is borrowed from Hacquard. And the intensional framework I use closely resembles the one proposed by Stephenson (which is, in turn, adapted from Lasersohn 2005). The crucial difference is as follows. Stephenson aims to account for non-autocentric readings of epistemic modals and argues that the knower is the judge, an individual distinct from the speaker even in root clauses (see discussion in 2.2). However, evidentials are strictly autocentric. This is nicely captured by using events because the holder of the speech event in root declaratives is always the speaker.

The building blocks of my proposal are presented below. I treat evidentials as sentential operators that take propositional arguments.

(17) [EV [$_{TP}$ ϕ]]

To account for the similarity of evidentials across different evidence types, I will follow the spirit of (Krawczyk 2012) and treat evidentials as encoding a form of reasoning about propositions; see also (Winans 2016) on *will*, and (Eckardt and Beltrama 2019) on German *wohl* and Italian presumptive future. Krawczyk (2012) argues that general concepts expressed by evidentials—direct, indirect, hearsay—are best understood as inferences to a good-fit or the best-fit explanation for different types of observation.[15] In this paper, I concentrate on subjectivity that underlies the behavior of evidentials of different evidence types. Therefore, for my purposes it is sufficient to say that evidentials encode reasoning and to treat evidence types as linguistic primitives (in line with a lot of current work on evidentiality; Faller 2002; Matthewson et al. 2007; Murray 2017). This is a shortcut.

Semantically, the evidential operator has two main ingredients: the first-person component, responsible for the origo, and the mental state component, responsible for the evidence type. The first-person component is the unique holder of an event, $\iota x.\mathrm{Holder}(x, e)$, which, in turn, is determined by the environment the evidential appears in. The mental state component is defined as a propositional attitude predicate that quantifies over indices.[16] Combining the two ingredients allows for a generalized treatment of evidentials, given in (18). Informally, an evidential describes the mental state of having reasoned about particular evidence, with a set of indices being the content of that mental state âĂŤ a conclusion of the reasoning process. This is parallel to how the mental state of thinking has content, namely the set of indices compatible with oneâĂŹs thoughts.

(18) **General template**

$[\![\text{ EV }]\!]^{c,\langle e,w\rangle,g} = \lambda p.\forall \langle e',w'\rangle \in \mathrm{REASON}_{\iota x.\mathrm{Holder}(x,e),w} : [p(e')(w')]$,
where $\mathrm{REASON}_{\iota x.\mathrm{Holder}(x,e),w} = \{ \langle e',w'\rangle \mid \text{ it is compatible with what } \iota x.\mathrm{Holder}(x,e)$
reasons in w at e for $\iota x.\mathrm{Holder}(x,e)$ to be $\iota y.\mathrm{Holder}(y,e')$ in w' at $e' \}$

Instead of propositional attitudes one can use modal bases, as it has been done for evidentials in a number of languages (Izvorski 1997; Matthewson et al. 2007; Peterson 2010; Faller 2011; Lee 2013 a.o.). Crucially, the evidence type is analyzed as part of the conventional meaning of evidentials and not, for example, as an implicature (see

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15. Krawczyk (2012) argues that evidentials only encode abductive reasoning, but this claim is incorrect. There are evidentials that can license deduction, for example, St'át'imcets inferential *k'a* (Matthewson et al. 2007). In general, a comprehensive discussion of the notion of evidence is beyond the scope of this paper. Other accounts of decomposing evidence, especially indirectness, include: Bayesian probabilities (McCready and Ogata 2007; McCready 2014; Lassiter 2016), causation (Davis and Hara 2014), event and situation ontology (Nikolaeva 1999; Speas 2010; Bowler 2018), and directness of knowledge (von Fintel and Gillies 2010).

16. This is a minimal departure from the Hintikkan tradition that treats attitude verbs as encoding accessibility relations between worlds.

discussion in Murray 2017:21-25). However, Maybe if one goes with modal bases, one needs to define them as subjective ones, not the regular modal ones, for the reasons I provide in the next sections of the paper.

In this system, different evidentials receive the same basic meaning modulo the difference in the evidence type, which is formalized as the difference in the set of alternatives they make reference to. For the sake of exposition, precise meanings for direct evidentials (19), inferential evidentials (20) and hearsay evidentials (21) are given below.[17] (The list, of course, is not exhaustive; see, for example, (Willett 1988) and (Aikhenvald 2004) for evidence types grammaticalized across languages.)

(19) **Direct evidentials**

$⟦ \text{Ev}_{\text{DIR}} ⟧^{c,⟨e,w⟩,g} = \lambda p.\forall⟨e',w'⟩ \in \text{REASON-DIRECT}_{\iota x.\text{Holder}(x,e),w} : [p(e')(w')],$ where $\text{REASON-DIRECT}_{\iota x.\text{Holder}(x,e),w} = \{ ⟨e',w'⟩ \mid$ it is compatible with what $\iota x.\text{Holder}(x,e)$ reasons based on direct evidence in w at e that $\iota x.\text{Holder}(x,e)$ is $\iota y.\text{Holder}(y,e')$ in w' at $e' \}$

(20) **Inferential evidentials**

$⟦ \text{Ev}_{\text{INF}} ⟧^{c,⟨e,w⟩,g} = \lambda p.\forall⟨e',w'⟩ \in \text{REASON-INF}_{\iota x.\text{Holder}(x,e),w} : [p(e')(w')],$ where $\text{REASON-INF}_{\iota x.\text{Holder}(x,e),w} = \{ ⟨e',w'⟩ \mid ⟨e',w'⟩$ is compatible with what $\iota x.\text{Holder}(x,e)$ reasons based on inference in w at e that $\iota x.\text{Holder}(x,e)$ is $\iota y.\text{Holder}(y,e')$ in w' at $e' \}$

(21) **Hearsay evidentials**

$⟦ \text{Ev}_{\text{REP}} ⟧^{c,⟨e,w⟩,g} = \lambda p.\lambda e.\lambda w.\forall⟨e',w'⟩ \in \text{REASON-REP}_{\iota x.\text{Holder}(x,e),w} : [p(e')(w')],$ where $\text{REASON-REP}_{\iota x.\text{Holder}(x,e),w} = \{ ⟨e',w'⟩ \mid ⟨e',w'⟩$ is compatible with what $\iota x.\text{Holder}(x,e)$ reasons based on hearsay in w at e that $\iota x.\text{Holder}(x,e)$ is $\iota y.\text{Holder}(y,e')$ in w' at $e' \}$

(22) is an evidential statement made with Georgian evidential past in its inferential guise, and (23) provides a translation derivation for it.

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17. There is one simplification I make. This semantics does not take into account the difference in strength of evidential statements. First, conjectural evidentials are often argued to talk about $◊p$, not p or $□p$ (Faller 2002; Murray 2017). Second, hearsay evidentials across languages often allow statements of the form [[Evp] $\wedge \neg p$] (see discussion in AnderBois 2014). Both patterns can be accounted for in the semantics I propose if the respective propositional attitude is treated as an existential quantifier (which is similar to adding an ordering source to the semantics of universal modals in the Kratzerian framework, see discussion in Faller 2011). In the Hintikkan tradition, propositional attitudes are treated as universal quantifiers, but recent research shows that it is not always the case; see (Močnik 2019) on existential belief, (Koev 2019) on gradable belief, and (Anand and Hacquard 2013) on *hope* as an existential doxastic with a ranking component. Evidentials, too, can be treated in a similar fashion. This issue does not affect my central claim about the subjectivity of evidentials and I will not return to it in this paper.

18

(22) Georgian

Inferential context: Friends send me a letter with an Eldorado stamp on it.

tʃem-s   megobr-eb-s   eldorado   **up'ovniat**
my-DAT   friend-PL-DAT   Eldorado   find.3PL.**IND.PST**
'My friends found Eldorado, *I infer*.'

(23) $[\![$ (22) $]\!]^{c,\langle e,w\rangle,g}$
$= [\![$ EV$_{\text{INF}}$ $]\!]^{c,\langle e,w\rangle,g}(\ \lambda e'.\lambda w'.[\![$ [$_{TP}$ friends found Eldorado] $]\!]^{c,\langle e',w'\rangle,g})$
$= \forall\langle e,'w'\rangle \in$ REASON-INF$_{\iota x.\text{Holder}(x,e),w}$: [friends found Eldorado in w' at e']
$= 1$ iff $\forall\langle e,'w'\rangle \in$ REASON-INF$_{\text{Speaker},w}$: [friends found Eldorado in w' at e']

The analysis I put forth treats the evidence type as part of the assertion in semantics. This diverges from a widespread view according to which evidentials are lexical triggers of peripheral, not-at-issue, meaning. In particular, it is common to analyze the evidence type as a presupposition (Izvorski 1997; Matthewson et al. 2007 a.o.) or as a kind of new not-at-issue contribution, similar to Pottsian conventional implicatures (Murray 2014, 2017; Koev 2017 a.o.). One of the core arguments in favor of the not-at-issue view has been the behavior of evidentials in dialogues. However, as I argue in Section 3 below, what happens in dialogues is best explained in terms of subjectivity, rather than at-issueness. As demonstrated in (Korotkova 2019), the not-at-issue view rests on a series of diagnostics that in fact do not show that evidentials lexically encode not-at-issue meaning. Instead, Korotkova proposes that information about evidence type may be often backgrounded for pragmatic reasons such as discourse coherence and reasoning about the question-under-discussion. This view on evidentiality is much like the pragmatic view on factivity in (Simons et al. 2017). Following Korotkova, I do not analyze evidentials as lexical triggers of not-at-issue meaning. To this end, consider the following parallel.

Clause-taking verbs have various parenthetical uses in which the complement, and not the matrix clause, is the main point of an utterance. This property is evidenced by the complement's ability to answer a direct question (24). Sometimes such uses are marked with a special syntax and intonation, as in (24a) (Ross 1973; Reinhart 1983; Potts 2002; Scheffler 2013 a.o.). But sometimes the matrix clause can be backgrounded without any overt syntactic or prosodic marking, as in (24b) (Simons 2007; Hunter 2016).

(24) Where is Ana?

    a.   She moved to Massachusetts, Miriam said.
    b.   Miriam said she moved to Massachusetts.

Of importance here is the idea that information can be backgrounded in the discourse due to some pragmatic calculation, rather than because there is an element in

semantics that is a dedicated vehicle for not-at-issue content. In particular, there is nothing in the semantics of (24b), in contrast to (24a), that makes the matrix clause not-at-issue. I will assume that there can be a similar pragmatic calculation in the case of evidentials (see detailed discussion in Korotkova 2019). The semantics that I advocate relies precisely their possible ability to be backgrounded, and in this paper I will not discuss the discourse status of evidence type any further. Whether at-issue or not-at-issue, the discourse status of the evidence type does not have to be included in the conventional meaning of evidentials, pace (Murray 2014, 2017) and other approaches to evidentials as lexical triggers of not-at-issue meaning. In the next sections, I show how my semantics derives the behavior of evidentials in dialogues, attitude reports and questions.

3   Dialogues

A hallmark of grammatical evidentials is their *non-challengeability*, illustrated with a Cuzco Quechua dialogue in (25). A direct denial can target the scope proposition, as in (25b). However, it is infelicitous to deny that the speaker has certain type of evidence for the scope proposition (25c).[18]

(25)   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. Manta-n-ta-lla-n   watuku-rqa-n.   [*p*]
          not=DIR   true-NEG   mother-3-ACC-LIM-DIR   visit-PST1-3
          'That's not true. She only visited her mother.'

    c.   #Mana=n chiqaq-chu. Mana-n chay-ta   riku-rqa-nki-chu.   [EVIDENCE]
          not=DIR   true-NEG   not-DIR   this-ACC   see-PST1-2-NEG
          Intended: 'That's not true. You didn't see this.'

                             (adapted from Faller 2002:156-158, ex. 116-119)

Based on the formal semantic studies of evidentiality, the pattern illustrated in (25) is universal. Non-challengeability does not depend on the morphosyntactic category of evidentials in a given language or on the evidence type, and is attested for evidentials in Bulgarian (South Slavic; Izvorski 1997), Cheyenne (Algonquian; Murray 2014), Georgian (South Caucasian; Korotkova 2012), German (Germanic; Faller 2007), Gitksan (Tsimshianic; Peterson 2010), Korean (Lee 2011), St'át'imcets (Salish;

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18. Premises for making a conclusion may be challenged, such as faulty logic or an untrustworthy source (Faller 2007; Matthewson et al. 2007).

Matthewson et al. 2007) and Tatar (Bowler 2019), as well as for Italian presumptive future (Frana and Menéndez-Benito. forth.).

The previous analyses of the pattern are as follows. In line with research on not-at-issue content (Tonhauser 2012; Tonhauser et al. 2013 a.o.), the infelicity of examples like (25c) has been attributed to a special discourse status of the information contributed by evidentials (Izvorski 1997; Matthewson et al. 2007; Faller 2002; Murray 2014, 2017; Koev 2017 a.o.). The main idea is that only at-issue content can be directly targeted in a conversation and that inability to be targeted by direct responses indicates not-at-issueness. In contrast, I will argue that the non-challengeability of evidentials is rooted in subjectivity. More generally, I will show that responses to evidential statements pattern like responses to subjective content at large. First, subjective expressions typically ban denial regardless of its linguistic shape. Second, they allow disagreement under special pragmatic conditions. Evidentials show a similar pattern. This behavior is not predicted by previous approaches to evidentiality, but falls out naturally under the subjective account proposed in Section 2.

3.1 A subjective account of non-challengeability

It is well-established in philosophical literature that self-knowledge is typically immune to correction (Bar-On 2004; Gertler 2011). By and large, it is infelicitous, and often presumptuous, to challenge or deny something that a third party has no access to, hence the oddness of (26), as well as (2).[19]

(26) A. I find Lapsang Souchong delicious.
      B. # No, you don't.

Find expresses a private opinion (Sæbø 2009; Kennedy and Willer 2016) and it is therefore weird for a third party to contest it (Umbach 2016). Similar logic has been invoked to explain the conversational dynamics with other subjective expressions, including taste predicates (Stephenson 2007a), expressives (Anand 2007), epistemic modals (von Fintel and Gillies 2011) and predicates of experience (Gunlogson and Carlson 2016). I argue that the non-challengeability of evidentials is of the same nature.[20]

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19. It is sometimes argued that there is no distinguished epistemic authority associated with self-knowledge, and that immunity to correction is simply a matter of linguistic norms, which render disagreement with subjective expressions infelicitous. However, such view fails to explain why those norms exist in the first place; see Gertler (2017) for discussion.

20. Vardomskaya (2018), generalizing the point made in (Gunlogson and Carlson 2016), proposes that the infelicity of disagreement with certain expresssions is due to the fact that those expressions denote direct experience, rather than self-knowledge (which she does not discuss). While direct experience is part of the semantics of some subjective expressions, such as taste predicates (Pearson 2013a; Ninan 2014; Anand and Korotkova 2018) and *find* (Reis 2013; Anand and Korotkova 2019a), Vardomskaya's proposal makes incorrect predictions. First, not all phenomena that are immune to correction are

Self-attributions of a mental state resist denial regardless of its linguistic form, as illustrated with a first-person attitude report in (27).[21] *That's not true* (27b), *You're mistaken* (27c), *You're wrong* (27d) and *I disagree* (27e) cannot challenge the attitude as a reply to (27a) because people normally have the highest epistemic authority over their own hopes, and a third party does not have access to such information.[22] Some types of content, such as presuppositions, can be targeted is something like "Wait a minute" is used (von Fintel 2004), however, none of the denials in (27) become felicitous with the addition of *Dur* 'Wait!'.

(27)   Turkish (Turkic; Turkey)

   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.   #Hayır. (Bu) doğru değil.
        no   this   true   NEG
        Intended:'No. That's not true'.

   c.   #Yanıl-ıyor-sun.
        be.mistaken-PROG-2SG
        Intended:'You're mistaken'.

   d.   #Haklı değil-sin.
        right   NEG-2SG
        Intended: 'You're not right.'

   e.   #Sana   katılm-ıyor-um.
        you.DAT join-PROG-1SG
        Intended: 'I disagree.'

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about physical experience, in particular, hopes, desires, and thoughts are not experiential in the usual way (though proponents of cognitive phenomenology may argue that mental states are experiences of some sort as well). Second, not all experiential phenomena are immune to correction, in particular, bodily awareness is not incorrigible (Bar-On 2004; de Vignemont 2015). I conclude that while direct experience may play a role in certain types of disagreement (see discussion in Gunlogson and Carlson 2016), the underlying reason for the non-challengeability of certain linguistic expressions is that they deal with self-knowledge, which is the accepted view in philosophy.

21. In principle, the infelicity of denials with certain attitude reports can be susceptible to an explanation along the lines of (Simons 2007): the matrix clause is pragmatically backgrounded, and therefore non-challengeable, and the preferred content is the main point of an utterance, as in (24). However, this explanation has a limited scope. For example, it cannot explain that denials are more readily available for third-person attitude reports, neither is it applicable to subjective expressions across the board, including cases in (2) and (26).

22. Some of those replies can express disagreement with the complement, an interpretation irrelevant here.

In contrast with (27), third-person attitude reports allow disagreement across the board (28), as both parties have low authority with regard to John's hopes and are therefore on the same epistemic footing.

(28) 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.
    c. ✓You are mistaken.
    d. ✓You are not right.
    e. ✓I disagree.

(29) demonstrates that evidentials resist denial across the board. In addition to the widely attested non-challengeability with *That's not true* (29b), they cannot be challenged using *You're mistaken* (29c), *You're not right* (29d), or *I disagree* (29e). As expected, the scope proposition can be challenged in all cases.

(29) Turkish

    a. *Context 1, hearsay: I read a note in Los Angeles Times.*
      Context 2, inference: I come to a hip neighborhood, and lots of people are
      smoking weed.

      Kaliforniya otu   yasallaştır-**mış**
      California   weed   legalize-IND
      'California legalized marijuana, *I hear/infer*.'

    b. That's not true.
      $= \neg$ [California legalized]
      $\neq \neg$ [You hear/infer it]

    c. You are mistaken.
      $= \neg$ [California legalized]
      $\neq \neg$ [You hear/infer it]

    d. You are not right.
      $= \neg$ [California legalized]
      $\neq \neg$ [You hear/infer it]

    e. I disagree.
      $= \neg$ [California legalized]
      $\neq \neg$ [You hear/infer it]

In contrast, not-at-issue contributions are sensitive to the linguistic form of denials, which is different from the behavior of evidentials and unquestionably subjective expressions. Thus, appositive content in (30) cannot be targeted by *That's not true* (30b), but can be targeted by *You're mistaken* (30c).[23]

(30)   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.
        $= \neg$ [California legalized]
        $\neq \neg$ [California is the largest state]
        (even with a continuation such as *Alaska is the largest state*)

    c.   You're mistaken.
        $= \neg$ [California legalized]
        $= \neg$ [California is the largest state]
        (better if there is a continuation such as *Alaska is the largest state*)

Non-challengeability of subjective content is due to the general immunity to correction associated with self-knowledge. It does not matter how denials are phrased linguistically, hence the infelicity of replies in (27b)–(27e). Not-at-issue content, on the other hand, is inaccessible to certain kinds of propositional anaphora (Jasinskaja 2016; Snider 2017), rather than immune to correction in general. Therefore, for not-at-issue content the acceptability of denial depends on its linguistic form. In particular, denials with *You're mistaken* are allowed (30c), as well as some other reactions that do not require the antecedent to be salient in the discourse (cf. Hunter and Asher 2016). The behavior of evidentials in (29) puts them squarely into the subjective group. The pattern is not predicted by accounts of evidentiality that derive non-challengeability solely from discourse status, but falls out naturally under the subjective account I advocate.[24,25]

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23. Replies such as *You're not right* and *I disagree* can target the content of the appositive in (30) if *Dur* 'Wait!' is added. This underscores my point that appositives are sensitive to the linguistic form of denial.

24. As discussed in detail in (Korotkova 2019), evidentials on the one hand and canonical not-at-issue contributions on the other further differ in their anaphoric potential: the former, but not the latter, allow propositional anaphora with *that* as long as it is not a denial, as in *That's surprising*. Such data constitute another argument against modeling the two types of content in the same fashion.

25. Incidentally, the pattern in (29) would be expected for inferential evidentials in most approaches. Even though the literature on evidentiality does not discuss self-knowledge as such, inferential evidentials are often treated as denoting a mental state, roughly an equivalent of *I infer*; see, for example, the lexical entry for the Cheyenne inferential in (Murray 2017:115). Inferentials, but not other types of evidentials, are therefore expected in those frameworks to be non-challengeable regardless of the

In the semantic framework I provided for evidentials in Section 2, evidentials are treated as first-person mental states. For concreteness, (31) is a translation of the evidential statement in (29a).

(31) $[\![$ (29a) $]\!]^{c,\langle e,w\rangle,g}$
  $= [\![$ mis$_{\text{INF}}$ $]\!]^{c,\langle e,w\rangle,g}($ $\lambda e'.\lambda w'.[\![$ $[_{TP}$ C. legalized marijuana $]$ $]\!]^{c,\langle e',w'\rangle,g})$
  $= \forall \langle e,'w'\rangle \in$ REASON-INF$_{\iota x.\text{Holder}(x,e),w}$: $[$ C. legalized marijuana in w' at e' $]$
  $= 1$ iff $\forall \langle e,'w'\rangle \in$ REASON-INF$_{\text{Speaker},w}$: $[$ C. legalized marijuana in w' at e' $]$

It should be emphasized that both the first-person and the mental state component of the analysis are crucial for my explanation of non-challengeability. Most approaches to evidentiality have some pronominal element in their semantics, for example, Murray (2014, 2017) treats the origo as an indexical. However, simple statements with indexicals are easily challenged, as (32) demonstrates:

(32) a. I ran a marathon.
  b. ✓No, you didn't. You ran a half-marathon.

Non-challengeability is rooted in the properties of cognitive processes denoted by evidentials, analyzed here as reasoning from given evidence. At the same time, as illustrated in the contrast between first- and third-person attitude reports (27, 28), only self-attributions are non-challengeable while third-person statements give rise to ordinary disagreement. To this end, it is necessary to have an element in the semantic denotation of evidentials that links the origo to the speaker in root declaratives.[26] Taken together, the components of my analysis ensure that evidentials behave like other subjective expressions and resist denial regardless of its linguistic form. In my account, the origo has the highest authority with respect to their evidential state and a third party cannot felicitously contest it under normal circumstances. In contrast, this pattern is not explained in most previous approaches to evidentiality that treat having evidence as an objective fact.[27]

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linguistic form of denial, in parallel to (i):

(i) a. I inferred that it rained.
  b. # No, you didn't.
  c. # You're mistaken, you didn't make that inference.

26. Linking the origo to the speaker is independently necessary for cases discussed in 2.2, which show that evidentials cannot be used to attribute evidence to a third party. Such data show that evidentials should not be treated as vanilla epistemic modals in the Kratzerian tradition (which does not specify who the knower is) or in the expressivist framework in (Yalcin 2007), where modals are relativized to an information state.
27. Koring (2013) treats Dutch hearsay *schjinen* as evaluative, so the contribution of the evidential is not analyzed as an objective fact. However, this notion of subjectivity is very different from mine, for example, it does not have a mental state component. Koring links subjectivity of *schjinen* to its

3.2   Performance disagreement

To recapitulate, I argue that it is typically infelicitous to disagree with evidentials and subjective content in general (a linguistic fact), because self-knowledge cannot be accessed by the disagreer (a non-linguistic fact). As illustrated below, such disagreements, while not impossible, are presumptuous:

> "That's not what you want." When arguing, it was always his tactic to deny the validity of our requests. If you wanted, say, a stack of pancakes, he would tell you not that you couldn't have them but that you never wanted them in the first place. "I know what you want" was always met with "No you don't." (David Sedaris, *Ashes*)

However, there are certain pragmatic conditions in which the ban on disagreement is suspended. One well-known exception is interactions with one's therapist, who may be in a better position to assess one's desires or intentions. Another case is what Anand (2007) calls *perfomance disagreement*. This is a situation when a third party challenges not the content, but the grounds for assertion, deeming the speaker insincere (for example, lying) or impaired (for example, drunk). (33) illustrates performance disagreement with a first-person attitude report:

(33)   Bulgarian
Context: Both interlocutors are devout Democrats.

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 the dialogue in (33) what is being challenged is sincerity or sanity. Crucially, this is not a genuine disagreement about content, given that it is impossible for a third party to know what another person hopes the world to be. My account predicts that evidentials, too, may give rise to performance disagreement. As (34) shows, this prediction is borne out:

(34)   Bulgarian

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positive polarity behavior (in the spirit of Giannakidou 2011) and does not give it a formal definition. Therefore, the analysis does not make any specific predictions about the behavior of evidentials with respect to different types of denial.

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 (34), the origo's competence is challenged. However, this is still not a disagreement about the kind of evidence the origo has. Dialogues similar to (34) and (33) 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:

(35) Tagalog (Austronesian; Philippines)
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, *I hear*.'

C. Hindi totoo yun. Nasa bahay nga si Magda, pero hindi
NEG true that. in house indeed DEF.NOM Magda, but NEG
sinabi ni Florian
said DEF.GEN 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 (35), 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 (35), Schwager argues that Tagalog *daw* is different from other evidentials and can be challenged. I argue that the dialogue in (35) does not in fact contradict the claim about the universal non-challengeability of evidentials. According to my consultants, such dialogues require special pragmatic licensing. First, (35) can be a case of performance disagreement. C had a pre-existing agreement with Florian such that he would not reveal Magda's location to B, and is effectively accusing B of lying. Second, (35) is possible if 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.

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Summing up, evidentials pattern with subjective expressions with respect to non-challengeability. As is well-documented in the literature, a third party cannot challenge one's having evidence using *That's no true*. I have shown that other types of denial, such as *You are mistaken*, are also infelicitous. Furthermore, evidentials pattern with subjective expressions even with respect to substandard performance disagreement. Those data are not handled in current approaches to evidentiality, but receive a straightforward account in the subjective analysis I put forth.

4   Attitude reports

This section is devoted to the origo shift in attitudes, and some additional readings of evidentials-in-attitudes are discussed in Appendix D.[28] I start by showing that the mere fact of shifting to the attitude holder is compatible with a wide variety of approaches to evidentiality and can be derived simply as an effect of intensional quantification. I then demonstrate that the origo must be construed *de se*. Following the literature on self-ascription, I argue that this fact warrants a special semantics and show how my proposed analysis accounts for the data.

4.1   Origo shift

In some languages evidentials cannot occur in complement clauses for syntactic reasons (Korotkova forth.). In those languages there they can, the most typical interpretation is the one where the origo shifts to the attitude holder, as in (36):

(36)   St'át'imcets (Salish; British Columbia, Canada)

    a.   INFERENCE

       Context: Lémya7 was babysitting your nephew and niece and she noticed at one point that the boy had a red mark on his face and his sister was looking guilty. She tells you when you get home what she noticed. Then you tell the mother of the kids:

       tsut s-Lémya7   [kw s-tup-un'-ás   **k'a** s-Maria   ta
       say NOM-Lémya7 [DET NOM-punch-TRANS-3.ERG INF NOM-Maria DET
       sésq'wez'-s-a]
       younger.sibling-3POSS-EXIS]
       'Lémya7 said that, given what she inferred, Maria hit her younger brother.'

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28. The term *attitude* covers both speech and attitude reports.

b. HEARSAY

tsut s-Lémya7 [kw sqwemémn'ek **ku7** s-Mary] t'u7 plán-lhkan
say NOM-L. [DET pregnant REP NOM-M.] but already-1SG.SUBJ
ti7 zwát-en áts'x-en-lhkan s-Mary áta7 tecwp-álhcw-a
DEM know-TRANS see-TRANS-1SG.SUBJ NOM-M. DEIC buy-place-EXIS
inátcwas
yesterday
'Lémya7 said that, as she was told, Mary is pregnant, but I already knew
that; I had seen Mary at the store.'

(adapted from Matthewson et al. 2007:229-230)

In (36a) and (36b), the inferential *k'a* and the hearsay *ku7*, respectively, track
the evidential state of the attitude holder, Lémya7. The same reading is attested for
Bulgarian; Dutch; Japanese (McCready 2010); Korean (Lee 2013); Tagalog (Schwager
2010; Kierstead 2015); Tibetan (Garrett 2001); Turkish (Şener 2011); and Zazaki
(Gajewski 2004).

Previous work on evidentiality takes the shift in attitudes to support a specific se-
mantic analysis. For example, McCready (2010) and Bylinina, Sudo, and McCready
(2014) propose that the origo shift is an instance of *judge* shifting, thus treating ev-
identials on a par with taste predicates. However, as discussed in detail in (Anand
and Korotkova 2019b), judges are not needed to account for the behavior of taste
predicates in attitudes, which in fact follows from the general rules governing the in-
terpretation of intersective adjectives (Keshet 2008). Therefore, the origo shift is not
an argument for analyzing evidentials as judge-dependent (other arguments against
this view were discussed in 2.2).

Garrett (2001) and Matthewson et al. (2007) argue that the origo shift supports
the modal view on evidentials, given that embedded epistemic modals shift to the
attitude subject (Stephenson 2007a; Hacquard 2006, 2010; Yalcin 2007; though see
Yanovich 2013):

(37) [GIVEN SCYLLA'S DOXASTIC STATE]
Scylla thinks that Odysseus' ship might pass Charybdis.

While I myself adapt Hacquard's analysis, I want to point to out that illocutionary
approaches to evidentiality can handle the origo shift as well, contrary to what has
been claimed in the literature.

Speech acts are often construed as dealing with discourse commitments (Szabolcsi
1982; Krifka 2014, 2015; Condoravdi and Lauer 2017). If speech acts are embeddable
at all (Krifka 2014), then embedded speech acts should be understood as a shift in
commitments, from the speaker to the attitude subject (cf. Krifka 2017). For example,
an analysis along those lines is offered for English high adverbials in (Woods 2014), for

Newari egophoric agreement in (Coppock and Wechsler 2018) and for Japanese experiencer predicates in (Hashimoto 2015). In a similar vein, re-implementing Faller's (2002) analysis of evidentiality in Krifka's (2014) framework, as it is done in (Thomas 2014; Korotkova 2017), predicts the origo shift.

Another strand of illocutionary approaches to evidentials treats them on a par with Pottsian supplements (Murray 2014, 2017; Koev 2017). Murray does not talk about the origo shift because evidentials in Cheyenne are banned from all subordinate clauses (Murray 2016). The analysis nonetheless predicts that evidentials may shift, just like supplements may in attitudes (Amaral et al. 2007; Harris and Potts 2009). The pattern is illustrated in (38):

(38)   *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 2009:548)

The bottom line is that the origo shift in attitudes does not lend support to any *specific* analysis. Thus, both modal and illocutionary approaches predict that evidentials will shift. Furthermore, as discussed in detail in 2.2, the shift of world-sensitive expressions in the syntactic scope of an attitude verb is simply the effect of intensional quantification. Even an analysis that has no individual argument for the origo in the semantic denotation—the way epistemics are analyzed in (Yalcin 2007)—will account for shifting in attitudes. Such an analysis is schematized in (39) below (assuming Hintikkan semantics for attitudes):

(39)   a. $[\![\text{ EV }]\!]^{c,w,g} = \lambda p.$ there is evidence for p in w

b. $[\![\text{ think }]\!]^{c,w,g} = \lambda p.\lambda x. \forall w' \in \text{DOX}_{x,w} : p(w')$,
where $\text{DOX}_{x,w} = \{ w' \mid w'$ is compatible with what x thinks in $w \}$

c. $[\![\text{ Lémya7 thinks EV}p]\!]^{c,w,g}$
$= [\![\text{ thinks }]\!]^{c,w,g}(\lambda w'.[\![\text{ EV}p]\!]^{c,w',g})([\![\text{ Lémya7}]\!]^{c,w,g})$
$= 1$ iff $\forall w' \in \text{DOX}_{\text{Lémya7},w} :$ there is evidence for p in w'

As argued in detail in Section 2, analyses along the lines of (39) overgenerate and fail to predict that evidentials are always speaker-oriented in root declaratives. As I show in the next section, an individual argument is also needed to account for the fact that the origo is a *de se* individual in attitudes.

4.2   Obligatory *de se* construal

The data in (36) do not fully capture the behavior of embedded evidentials. To this end, consider mistaken identity scenarios in (40) and (41):

(40) Turkish

✓*Context 1: Alexis was playing an escape room with a team. One of the team members told her that the clue was in the left corner and she describes the situation to me.*

#*Context 2: 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. [HEARSAY]
Alexis [clue left corner-LOC-IND.PST] say-PST
Intended: 'Alexis said that she was told that the clue was in the left corner.'

(41) Turkish

✓*Context 1: Alexis was playing in an escape room. She figured that the clue must be in the left corner and tells me about it.*

#*Context 2: 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 köse-dey-miş] de-di. [INFERENCE]
Alexis [clue left corner-LOC-IND.PST] say-PST
'Alexis said that she inferred that the clue was in the left corner.'

Alexis can use *mış* to describe her evidence in Context 1 in (40). However, in Context 2, 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 *mış* to attribute hearsay evidence to that person. At the same time, because the video is muted, Alexis does not have access to the content of the verbal exchange between team members, and therefore she would not use *mış* to describe her own evidential state. The set-up in (41) is parallel to that in (40). Such examples demonstrate that evidentials are only licensed if the origo is consciously aware of their evidence.

The data in (40) and (41) are reminiscent of (5) and (6), which show that it is impossible for the speaker to attribute evidence to a third party. However, if the behavior of evidentials in root declaratives can be explained by any analysis that treats them as first-person mental states (see discussion in Section 3), their behavior in attitudes calls for a more involved account. Awareness is the signature of attitudes *de se* (Lewis 1979; Perry 1979), and a number of linguistic expressions, most notably pronouns,

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can only occur in such attitudes, including PRO, logophors, long-distance reflexives, and shifted indexicals (see discussion and references in Anand 2006; Schlenker 2011; Pearson 2013b; Zu 2018).[29] Based on the data in (40) and (41), I argue that the origo is one of such expressions, thus being similar to other *de se* expressions in the verbal domain, such as egophoric agreement, the jussive mood, or experiencer predicates (Zu 2018:174-189). Interestingly, the observation that the origo has to be read *de se* dovetails with the observation that in the nominal domain phonologically null or minimal pronouns are more likely to be obligatorily read *de se* (Patel-Grosz forth.). To account for the obligatory *de se* construal of the origo, I propose an analysis along the lines of *de se* binding, which relies on the treatment of *de se* originally proposed in (Chierchia 1989).[30]

Before I provide an analysis for evidentials, here is an illustration of *de se* binding in this type of framework. As first noted by Morgan (1970), obligatorily-controlled PRO is only compatible with a *de se* interpretation (42b), while *he* can be used both *de se* (42b) and *de re* (42a).

(42)   a.   *Context: Winnie the Pooh and Piglet are going to hunt a Woozle. They find footprints that they think belong to one of those creatures. Unbeknownst to them, however, they have been walking in circles, and the footprints are Pooh's own.*

✓Pooh$_i$ claimed that **he**$_i$ was a Woozle.
#Pooh$_i$ claimed **PRO**$_i$ to be a Woozle.

   b.   *Context: Pooh thinks he himself is a Woozle.*

✓Pooh$_i$ claimed that **he**$_i$ was a Woozle.
✓Pooh$_i$ claimed **PRO**$_i$ to be a Woozle.

(adapted from Pearson 2013b:559-560)

To account for the distribution of PRO, Chierchia proposes that attitude verbs can be quantifiers over centered worlds (43), in addition to just propositions, thus following (Lewis 1979) in treating attitudes *de se* as self-ascriptions of a property (I'm using an extensional notation for expositional purposes). The important part of the analysis is that for each of the relevant alternatives, the attitude holder in the world of evaluation identifies with a certain individual inhabiting that world.

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29. Note that there are logophors (Pearson 2015) and shifted indexicals (Deal 2017) that can be construed *de re*.

30. The proper account of *de se* is a matter of a debate. For example, a prominent alternative to a Chierhia-style analysis is to treat *de se* as a special case of *de re*, thus avoiding dedicated *de se* LFs (Lewis 1979; Maier 2010; Santorio 2014 a.o.); see discussion and references in (Pearson 2018, Patel-Grosz forth.).

(43) $[\![\text{ claim }]\!] = \lambda P.\lambda x.\lambda w.\forall \langle x', w' \rangle \in \text{CLAIM}_{x,w} : P(x')(w'),$
     where $\text{CLAIM}_{x,w} = \{\langle x', w' \rangle \mid$ it is compatible with what x claims in w for x to be x' in $w' \}$

Chierchia further argues that PRO has to be abstracted over, which results in its obligatory *de se* construal:

(44) a. $\lambda w_0 \ w_0$ Pooh claimed $[_{\text{CP}} \ \lambda x_1 \ \lambda w_1 \ w_1 \ \text{PRO}_1$ to be a Woozle $]$.
     b. $[\![\text{ (44a) }]\!] = 1$ iff $\forall \langle x', w' \rangle \in \text{CLAIM}_{Pooh,w_0} : x'$ is a Woozle in w'.

Hacquard's original system, which I adapt for evidentials, does not account for *de se*. However, such account is needed independently, because the knower of epistemics has to be construed *de se* as well (Stephenson 2007b:130). As discussed in 2.3, I treat attitude verbs, as well as other intensional operators, as quantifiers over indices of evaluation. Throughout the paper, indices are treated as world-event pairs. The advantage of this system is that it allows to synthesize approaches to *de se* and the intensional version of event relativity (cf. Schlenker 2005, 2011; Zu 2018 on events *de se*).[31] The lexical entry for 'say' is given in (45) below.

(45) $[\![\text{ say }]\!]^{c,\langle e,w \rangle,g} = \lambda p.\lambda x.\forall \langle e', w' \rangle \in \text{SAY}_{x,w} : p(w')(e'),$
     where $\text{SAY}_{x,w} = \{\langle e', w' \rangle \mid$ it is compatible with what x in w at e says for x to be $\iota y.\text{Holder}(y, e')$ in w' at $e' \}$

Recall from 2.3 that the origo directly refers to the unique holder of the event of the index. In root declaratives, this event is the speech event and the origo is anchored to the speaker. In attitude reports, this is the event described by the attitude verb, such as the event of saying in case of *say* or the state of thinking in case of *think*. The unique holder of this event is the individual the attitude holder identifies with, which accounts both for the origo shift and for the obligatory *de se* construal. The translation for (41) is given in (46) below.

(46) $[\![\text{ Alexis says } [\ \textit{mış} \ [\text{ the clue is in the left corner }]]]\!]^{c,\langle e,w \rangle,g}$
     $= [\![\text{ say }]\!]^{c,\langle e,w \rangle,g}$
     $\quad (\lambda e'.\lambda w'.[\![\ \textit{mış} \ ]\!]^{c,\langle e',w' \rangle,g} (\lambda e''.\lambda w''.[\![\text{ the clue is in the left corner }]\!]^{c,\langle e'',w'' \rangle,g}))$
     $\quad\quad ([\![\text{ Alexis }]\!]^{c,\langle e,w \rangle,g})$
     $= \forall \langle e', w' \rangle \in \text{SAY}_{Alexis,w} : [\![\ \textit{mış} \ [\text{ the clue is in the left corner }]]\!]^{c,\langle e',w' \rangle,g}$
     $= 1$ iff $\forall \langle e', w' \rangle \in \text{SAY}_{Alexis,w} :$
     $\quad [\forall w'' \in \text{REASON-INF}_{\iota x.\text{Holder}(x,e'),w'} : [\text{ the clue is in the left corner in } w'' \ ]]$

Note that the origo in (46) does not directly refer to Alexis. If it were the case, the semantics would allow the sentence in (41) to be used in Context 2, the mistaken identity scenario, because it is Alexis on the video and thus the correct antecedent for the origo. To ensure awareness on part of the origo, the semantics has an indirect link between the origo and the attitude holder. Indices contain events with holders of which the attitude holder can identify, which makes the origo similar to PRO in (Anand and Nevins 2004; Stephenson 2010).

The obligatory *de se* construal of the origo is not mentioned in the literature and therefore the existing analyses of evidentiality do not account for the data. As is well-known in the literature on self-ascription, obligatory *de se* construal needs to be derived in some way, whether one adopts dedicated *de se* LFs or other approaches to *de se*. For example, epistemic modals have to be construed *de se*, but not all analyses of modality in fact account for it, including the standard Kratzerian semantics. As a consequence, modal approaches to evidentiality, such as (Matthewson et al. 2007; Peterson 2010; Lee 2013), do not derive *de se* either.

Needless to say, the analysis I put forth is not the only way to provide an account for *de se*. For example, Coppock and Wechsler (2018) argue that *de se* in the case of Newari egophoric agreement results from referring to the epistemic authority of a speech act, treated as a self-ascription. Hashimoto (2015) offers a conceptually similar view on Japanese experiencer predicates. In line with the clausal architecture advocated in (Speas and Tenny 2003; Speas 2004), those analyses entail that only speech act embedding verbs allow egophoric agreement and experiencer predicates in their complements. Criticized for perspectival phenomena across the board (Zu 2018), this view is not justified empirically for evidentiality because the cross-linguistic distribution of evidentials across attitude predicates has not been studied systematically. My proposed analysis, on the other hand, comes with a rather benign assumption that evidentials need to be relativized to an event with propositional content. It predicts that evidentials should be embeddable only under representational attitudes (Bolinger 1968), ones that quantify over information state, such as *think* or *believe* but not *want* or *prefer*, which have a different semantics and do not provide an information state (cf. Anand and Hacquard 2013 on epistemics). This is consistent with what is known so far about evidentials-in-attitudes, typically licensed in the complements of *say, think* and *believe*; see (Garrett 2001) on Tibetan, (Sauerland and Schenner 2007) on Bulgarian, (Schenner 2010a) on German, and (Schenner 2010b, Korotkova forth.) on Turkish.

Summing up, the origo in attitudes refers to the attitude holder that is construed *de se*. This new empirical observation has no account in the existing literature on evidentiality, although it is not impossible to incorporate *de se* in some of them. The analysis that I propose captures those data by treating attitude verbs as quantifiers over indices and by the event relativity of evidentials. Conceptually, the obligatory *de se* construal of evidentials may be connected to the phenomenon of immunity to

error through misidentification, a common property of first-person mental states (see discussion and references in Prosser and Recanati 2012; García-Carpintero 2015). I leave investigating this possible connection for future research.

5   Questions

As shown throughout the paper, the origo is the speaker in root declaratives (47a, 48a). In information-seeking questions, the origo shifts to the addressee, even though a speaker-orientated reading is logically possible (47b, 48b).

(47)   Bulgarian (South Slavic; Bulgaria)   [INFERENCE]

    a.   *Context: I see a bear's tracks while hiking.*

        Mečka   e   mina-**l**-a   ottuk.
        bear   be.3SG.PRES   pass-**IND**-f   from.here
        'A bear passed here, **I infer**.'

    b.   ✓*Context 1: Kit and I are hiking in the bear country and see fresh tracks. I am clueless about such things, but Kit recently took a wilderness class and has better judgment. I ask:*

        #Context 2: Kit and I are hiking in the bear country and see fresh tracks. Kit is clueless about such things, but I recently took a wilderness class and can recognize a bear' tracks. I then forget what I say and ask:

        Mečka   li   e   mina-**l**-a   ottuk?
        bear   Q   be.3SG.PRES   pass-**IND**-F   from.here
        ✓ADDRESSEE-ORIENTED: 'Given what you infer, did a bear pass here?'
        #SPEAKER-ORIENTED: 'Given what I infer, did a bear pass here?'

(48)   German (Germanic; Germany)   [HEARSAY]

    a.   *Context: A ranger, pointing to the tracks I don't recognize, tells me that they belong to a bear.*

        Ein   Bär   **soll**   hier   gewesen   sein.
        INDEF   bear   **REP**.3SG.PRES   here   be.PRT   be.INF
        'A bear was here, **I hear**.'

b. ✓*Context 1: Kit and I are hiking in the bear country and see fresh tracks. Kit talks to a ranger (I can't hear them). I ask:*

#Context 2: Kit and I are hiking in the bear country and see fresh tracks. I talk to a ranger, but then forget what I am told and ask:

Soll hier ein Bär gewesen sein?
REP.3SG.PRES here INDEF bear be.PRT be.INF
✓ADDRESSEE-ORIENTED: 'Given what you heard, did a bear pass here?'
#SPEAKER-ORIENTED: 'Given what I heard, did a bear pass here?'

As (47b) and (48b) show, speaker-oriented readings are not attested. For example, (48b) can be used in Context 2 only if the speaker has previously told the addressee what the ranger said, and is preceded by something like *Was habe ich gesagt?* 'What did I say', which makes the question about the addressee's hearsay evidence.

The situation in (b) and (b) is an instance of a robust cross-linguistic pattern, attested in Cheyenne (Algonquian; Murray 2017); Cuzco Quechua (Quechuan; Faller 2002); German *sollen* (Faller 2007); German *wohl* (Zimmerman 2004a); Gitksan hearsay *gat* (Tsimshianic; Peterson 2010); Japanese; Korean (Lim 2010); St'át'imcets (Salish; Matthewson et al. 2007); Tagalog (Austronesian; Schwager 2010); Tibetan (Tibeto-Burman; Garrett 2001); Turkish (Turkic; Meriçli 2016). There are also evidentials that cannot be used in interrogative clauses at all, such as Georgian evidential past (Korotkova 2012) or Tibetan direct *shag* (Kalsang et al. 2013). And there are evidentials that can only be used in questions whose pragmatic function is different from a regular information-seeking question, such as Gitksan inferential *ima* (Littell et al. 2010; Peterson 2010) or Italian presumptive future (Eckardt and Beltrama 2019), which are only used in self-addressed questions. However, if an evidential can be used in canonical questions at all, speaker-oriented readings are not attested. In other words, the origo shifts. Some additional readings of evidentials-in-questions are discussed in Appendix C.

Most extant approaches to the origo shift in questions attribute it to an obligatory semantic and/or syntactic mechanism. I will follow Garrett (2001) and argue that the shift is best understood in terms of conversational pragmatics. I will further show that the ban on speaker-oriented interpretation follows from the subjectivity of evidentials. Because the origo is the highest authority about their evidential state, it is odd for them to pose an information-seeking question about it, since such questions require the speaker's ignorance. Finally, evidentials may be speaker-oriented in questions that do not require ignorance about the answer, including exam questions, biased questions and self-addressed questions. This falls out naturally under the pragmatic account of shifting that I advocate but is left unexplained if the shift is hard-wired to the semantics and/or syntax.

5.1 Previous approaches

The existing approaches to the origo shift can be grouped into two families: indexical approaches and universal approaches. Below I show that each of them makes wrong predictions.

According to indexical approaches (Lim 2010; Murray 2012a), the origo shift in questions is a variety of indexical shift. The origo is treated as a personal indexical that switches its reference under certain circumstances. In root declaratives, the pronoun is always relativized to the original context of utterance and is thus anchored to the speaker, just like English *I*. Questions, on the other hand, introduce a new entity that the pronoun may refer to, which causes the origo to shift. The notion of indexical shift is associated with languages where *I* can refer to the attitude subject in complement clauses (see Deal 2017; Sundaresan 2018a for an overview), and indexical approaches to the origo shift in fact employ the same machinery. Thus, Lim treats the origo shift as an instance of context shifting, the mechanism first proposed for shifted indexicals in Amharic (Schlenker 2003) and Zazaki (Anand and Nevins 2004). And Murray derives the origo shift via obligatory perspectival re-centering, an analysis that lives side by side with pragmatic approaches to indexical shift in attitudes (Bittner 2012; Koev 2013; Roberts 2015b). Indexical approaches to the origo shift thus predict that bona fide indexicals should be able to shift in questions in languages where they shift in attitudes. This prediction is not borne out. For example, Turkish is a language where evidentials shift in questions (Meriçli 2016) and where indexicals shift in attitudes (Şener and Şener 2011; Özyildiz 2012). However, *I* and *here* are obligatorily speaker-oriented in questions (49b, 50b), even though they can shift in attitudes (49a, 50a).[32] So in Turkish, the actual shiftable indexicals and the purported origo indexical behave differently in questions.

(49) Turkish: personal indexical

    Context: Beste and I are talking about kale.

    a. Beste [sev-er-**im**   ] di-yor   [ATTITUDE]
         Beste [like-HAB-**1SG**] say-PROG
         NON-SHIFTED: ✓'Beste says I (speaker) like it.'
         SHIFTED: ✓'Beste says she (Beste) likes it.'

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32. McCready (2007) suggests that Japanese *boku* 'I' is an indexical that may shift in questions, citing examples similar to *Do we like spinach?*. However, just like English *we*, such use is restricted to caretaker contexts, typically addressing children, and can also occur in declaratives:

(i) *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'.

  Summing up, Motherese uses of *boku*, where it is not speaker-oriented, do not constitute genuine counter-examples to the prohibition on indexical shift in questions.

b. sev-er   mi-**yim**?   [QUESTION]
    like-HAB Q-**COP.1SG**
    NON-SHIFTED: ✓'Do I like it?'
    SHIFTED: # 'Do you like it?'

(50) Turkish: adverbial indexical

Context: I am in Paris, Meaghan is in Los Angeles. Meaghan is talking about Jun.

a. Meaghan [Jun **bura-da**   oku-yor   ] de-di   [ATTITUDE]
    Meaghan [Jun **here-LOC** read-PROG] say-PST
    NON-SHIFTED, speaker's 'here': ✓'Meaghan said Jun studies here (=Paris).'
    SHIFTED, Meaghan's 'here': ✓'Meaghan said Jun studies here (=LA).'

b. Jun **bura-da**   mi oku-yor?   [QUESTION]
    Jun **here-LOC** Q   read-PRES.PROG
    NON-SHIFTED, speaker's 'here': ✓'Does Jun study here (=Paris)?'
    SHIFTED, Meaghan's 'here': # 'Does Jun study here (=LA)?'

The data in (49) and (50) demonstrate that the indexical approaches to the origo shift overgenerate in their current form and only make correct predictions for languages that do not shift indexicals. Given how widespread the origo shift in questions is, it is desirable to have one analysis equally applicable to all languages regardless of whether these languages shift indexicals in attitudes. One may argue that the origo is yet another type of indexical, one that does shift in questions. However, while technically possible, this route is less appealing on the grounds of parsimony. Furthermore, indexical shift in attitudes is highly constrained syntactically and has been argued to require a presence of a special shifting operator (see, for example, Shklovsky and Sudo 2014; Major 2019 on Uyghur). This explains why indexicals do not shift in questions and suggests that the origo shift in questions is a separate phenomenon. Summing up, the indexical approaches to the origo shift make wrong predictions, and I turn to a different line of thought below.

According to universal approaches (Speas and Tenny 2003; McCready 2007; Bylinina et al. 2014; Woods 2014), the origo shift in questions is an instance of a more general phenomenon dubbed *interrogative flip* (Tenny 2006). It has been observed that many point-of-view phenomena shift to the addressee in questions. For example, in addition to evidentials, the pattern is well-known from Japanese experiencer predicates. As (51) shows, bare uses always refer to the addressee in questions:

(51) Japanese

Context: When Taro is not the addressee.

{*boku/ kimi/ *Taroo} -wa   ures-ii   (ka)?
I/   you/   Taro   -TOP glad-COP.PRES Q
'{*Am I / Are you / *Is Taro } glad?'   (adapted from Hashimoto 2015:95)

It has been argued that the behavior of experiencer predicates across linguistic environments is driven by locality (Tenny 2006; Hashimoto 2015). In particular, it has been proposed that the experiencer must be co-indexed with the closest speech act participant. In matrix questions, this participant is the addressee. (Zu (2018) provides a different structural account wherein the experiencer, instead of co-varying with a discourse participant, is linked to the perspectival center that depends on the clause type.)

An analysis along those lines has been proposed for a variety of phenomena, and Speas and Tenny (2003) also include the following expressions under the general point-of-view umbrella: epistemic modals, epithets, evidentials, expressives, high adverbials, logophors, and shifted indexicals. Their main point is that all of the expressions above are driven by the same underlying syntactic constraints, and that they must be co-indexed with the structurally closest speech act participant. Interrogative flip is argued to be due to a configuration in which the addressee moves to become the closest binder in questions.

However, not all of those expressions shift in questions, as is shown in (49) and (50) for shiftable indexicals. More generally, there is simply not enough evidence to make syntactic claims about evidentials apart from the fact that they are high in the clausal spine (see detailed discussion in 2.2). To this end, it would be premature to say that evidentials and, say, logophors have the same syntax, especially given that there are different approaches to the syntax of logophors (Nishigauchi 2014; Sundaresan 2018b; Charnavel. forth. a.o.).

Here, I would like to concentrate on semantics. Different expressions that are subject to interrogative flip do not form a natural class semantically and even their behavior in questions is not uniform. For example, high adverbials are often subsumed under the rubric of shifty phenomena (Garrett 2001; Speas and Tenny 2003; Lim and Lee 2012; Woods 2014; Zu 2015). However, some of them do not undergo interrogative flip at all, as in (52):

(52) Why did John **unfortunately** leave? #Something I personally find extremely
      fortunate.   (Gärtner and Steinbach 2006:219)

And some adverbials may have addressee-oriented readings only under special pragmatic conditions, as in (53):

(53) **Honestly**, when will you finish the paper?

      NON-SHIFTED: the speaker is honest in asking
      SHIFTED: the speaker requests an honest reply from the addressee

The speaker-oriented reading in (53) is neutral, but the shifted reading seems to presuppose that the speaker has asked this same question before and requests that the addressee rethinks their answer.

Furthermore, sometimes interrogative flip is optional, as is the case with expressions of spatial deixis (54), context-sensitive adjectives (55) or taste predicates (56):[33]

(54)   Who is the person **on the left**?

    —the speaker's left
    —the addressee's left
    —a third party's left

(55)   Did you go to a **local** bar?

    —local to the speaker
    —local to the addressee
    —local to a third party

(56)   Was it **tasty**?

    —tasty to the speaker
    —tasty to the addressee
    —tasty to a third party

In general, expressions of spatial deixis (Barlew 2016) and context-sensitive adjectives like *local* (Partee 1989) can be anchored to a salient individual that is not necessarily a discourse participant. Likewise, as discussed in 2.2, taste predicates are notorious for not requiring an autocentric perspective in root declaratives. In a similar vein, they do not always shift in questions, even though this interpretation may be the default (see discussion in Lasersohn 2005). At the same time, as discussed in (MacFarlane 2014), *tasty* is different from *local*, so even expressions that are subject to optional interrogative flip do not form a natural class.

I want to emphasize the point already made earlier in the paper. Natural language has many ways of referring to the first person, and it is not a given that all expressions that can be labeled as "point-of-view" have a unified semantics and/or syntax. To this end, analyses that attribute interrogative flip to an obligatory mechanism make wrong predictions. First, the flip is not always obligatory and it is not clear how to define "point-of-view" in a non-circular way to account for those differences. In particular,

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33. Based on examples such as (i) below, Roberts (2015a) argues that epistemic modals, too, may be speaker-oriented in questions:

(i)   *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?

  Given the nature of the game, Mordecai is expected to give an answer based on the publicly available knowledge, something that *must* is sensitive to in general, therefore I do not consider (i) to be a non-shifted reading.

it is not clear in this account why evidentials have to shift obligatorily while other expressions may shift optionally. Second, shifting in questions is often attributed to the same mechanism as shifting in attitudes. However, as discussed in detail in 2.2 and 4.1, the shift in attitudes can be derived from intensional quantification alone. This means that shifting in attitudes cannot be used as an argument for a unified treatment of expressions that undergo it. And even in root clauses not all expressions behave the same way, in particular, evidentials require an autocentric perspective while epistemics and taste predicates do not. Summing up, the universal approaches to the origo shift paint too general of a picture and are not nuanced enough to account for the difference between evidentials and other phenomena.

5.2 A subjective account of the origo shift

The near-consensus in the literature is that the origo shift in questions is due to an obligatory mechanism, possibly the same that is responsible for the shift in attitudes. The lack of speaker-oriented readings in such frameworks is derived as a side effect. Instead, I argue for a division of labor between semantics and pragmatics. My proposal has two parts. First, I propose that the shift is best understood in pragmatic terms and thus can be optional. Second, I propose that the lack of speaker-oriented readings of evidentials in information-seeking questions stems from the subjectivity of evidentials.

Following the spirit of the universal approaches, I argue that interrogative flip at large is a result of a general pragmatic pressure. The crucial intuition is that canonical questions are by default about the addressee's information state. Even simple questions without evidentials or other "point-of-view" elements solicit the addressee's opinion regarding a particular issue, which can be achieved in a strictly Gricean way (cf. Potts 2006). It then comes as no surprise that linguistic expressions that explicitly target an agent's information state *may* shift to the addressee. To my knowledge, this idea was first articulated by Garrett (2001).[34]

The immediate advantage of a purely pragmatic view, compared to the previous hard-wiring approaches, is as follows. It allows for a unified account of varied shifty phenomena without incorrectly claiming that they form a natural class. It is not unlikely that some languages grammaticalize the pragmatic pressure to talk about the addressee in information-seeking questions. For example, it is clear that experiencer predicates such as *be lonely* or *be glad* are treated differently by the grammar of Japanese compared to the grammar of English. To this end, I am not proposing to throw structural accounts of Japanese experiencer predicates out of the window. However, I argue that a structural account is not needed to explain why evidentials do not have speaker-oriented readings in information-seeking questions.

The view I advocate makes the following prediction. If the shift is rooted in prag-

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34. The approach in (Speas and Tenny 2003; Tenny 2006) can be seen as a different operationalization of the same notion, with pragmatics being encoded in the system.

matics, it should be optional unless overridden by hard constraints. This prediction is borne out. As I have already shown in 5.1, "point-of-view" expressions vary in whether the shift is optional or obligatory, a fact I use as an argument against the universal approaches. Yet another example of optional shift comes from the behavior of English slifting parentheticals (Ross 1973). These configurations typically feature a first-person subject in declaratives (57a) and a second-person subject in questions (57b), the so-called *wh*-slifting (Haddican et al. 2014):

(57) 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, and such parentheticals have been argued to be of evidential nature (Simons 2007). It is thus only natural to regard the person alternation in (57a) and (57b) as a case of interrogative flip. However, the second person subject in *wh*-slifts is just a preference, and in fact both first-person (58a) and third-person (58b) subjects are allowed:

(58) 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. Therefore, additional constraints are needed to explain why, for some expressions, only shifted readings are possible. I argue that the subjectivity of evidentials is one such constraint. In a nutshell, I propose that evidentials are incompatible with speaker-oriented readings because they encode a type of self-knowledge. As such, the origo is the only person who can immediately access their evidential state. Below I start by providing a vanilla semantics for evidential questions, and then turn to the pragmatics.

I will assume the Hamblin (1973)-Karttunen (1977) tradition wherein the denotation of a question is a set of its possible answers, both true and false.[35] In this tradition, the polar question operator receives the semantics in (59):

(59) $[\![Q_{Y/N}]\!] = \lambda p.\ \lambda q.\ [q = p \lor q = \neg p]$

(60) is a sample derivation for a matrix polar question (ignoring the syntax of auxiliaries):

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35. Nothing hinges on this particular choice; see (Krifka 2011; Dayal 2016) for an overview of approaches to the semantics of questions.

(60) a. Did a bear pass here?

    b. LF: $[_{CP}\ Q_{Y/N}\ [_{TP}\ \text{a bear passed here}]\ ]$

    c. $[\![\ [_{CP}\ Q_{Y/N}\ [_{TP}\ \text{a bear passed here}\ ]\ ]\ ]\!]^{c,\langle e,w\rangle,g}$
      $= [\![Q_{Y/N}]\!]^{c,\langle e,w\rangle,g}(\lambda e'.\lambda w'.\ [\![\text{a bear passed here}\ ]\!]^{c,\langle e',w'\rangle,g})$
      $= \lambda q.\ [q = \lambda e.\lambda w.\ \text{a bear passed here in } w \text{ at } e$
              $\vee\ q = \lambda e.\lambda w\ \neg[\text{a bear passed here in } w \text{ at } e]]$
      $= \{\text{"that a bear passed here", "that a bear did not pass here"}\}$

Recall that I advocate an analysis of evidentials as propositional attitudes, as shown in (21) (repeated from 18).

(61) $[\![\ \text{EV}\ ]\!]^{c,\langle e,w\rangle,g} = \lambda p.\forall\langle e',w'\rangle \in \text{REASON}_{\iota x.\text{Holder}(x,e),w}[p(e')(w')]$

Combining the semantics of evidentials with the semantics of questions would yield the set in (62):

(62) $[\![\ Q_{Y/N}\ [\ \text{EV}p\ ]\ ]\!]^{c,\langle e,w\rangle,g}$
    $= [\![\ Q_{Y/N}\ ]\!]^{c,\langle e,w\rangle,g}(\lambda e'.\lambda w'.[\![\ \text{EV}\ ]\!]^{c,\langle e',w'\rangle,g}(\lambda e''.\lambda w''.[\![\ p\ ]\!]^{c,\langle e'',w''\rangle,g}))$
    $= \lambda q.[q = \forall\langle e',w'\rangle \in \text{REASON}_{\iota x.\text{Holder}(x,e),w}[p(e')(w')]$
         $\vee q = \neg[\forall\langle e',w'\rangle \in \text{REASON}_{\iota x.\text{Holder}(x,e),w} : [p(e')(w')]]]$
    $= \{\forall\langle e',w'\rangle \in \text{REASON}_{\iota x.\text{Holder}(x,e),w} : [p(e')(w')],$
      $\neg[\forall\langle e',w'\rangle \in \text{REASON}_{\iota x.\text{Holder}(x,e),w}[p(e')(w')]\}$

Intuitively, this result in (62) is too weak. It has been often noted that evidentials in information-seeking questions expect that the origo will have relevant evidence for the scope proposition or its complement.[36] For example, Murray argues that in Cheyenne it is infelicitous for the addressee to answer an evidential question with a non-matching evidential (Murray 2010, 2014, 2017), as (63) illustrates:

(63) Cheyenne (Algonquian; Montana, USA)

    a. Mó=é-némene-sèstse Floyd
       q=3-sing-REP.3SG   Floyd
       'Given what you heard, did Floyd sing?'

    b. ✓Héehe' é-némene-sèstse
       yes   3-sing-REP.3SG
       'Yes, he sang, I hear.'

    c. #Héehe' é-némene-∅
       yes   3-sing-DIR
       Intended: 'Yes, he sang, I'm sure.'   (adapted from Murray 2010:142)

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36. Bhadra (2019) argues that reactions to biased questions with evidentials are more flexible.

A similar situation holds in German. If the question contains *sollen* and the reply does not, it is necessary to use a marker of violated expectation or another qualifier (64), otherwise the sentence is not felicitous.

(64)   German

    a.   An investigator asking their witness who is supposed to have hearsay evidence.

       Wer soll   die Waffe beschafft   haben?
       who REP.3SG.PRES DEF gun   purchase.PRT have.INF
       'Given what you heard, who has purchased the gun?'

    b.   { Tatsächlich / genau genommen } habe   ich gesehen, dass
        actually   / precise take.PRT   have.1SG.PRES I   see.PRT   COMP
       Peter Hans die Waffe gegeben hat.
       Peter Hans DEF gun   give
       '{ Actually / Strictly speaking }, I have seen that Peter gave the gun to Hans.'

To strengthen the meaning of evidentials in questions, I make an ancillary assumption that evidentials trigger an Excluded Middle inference (cf. Winans (2016) on inferential *will*). According to (65), the origo has an opinion regarding the scope proposition based on the evidence they have:[37]

(65)   EVIDENTIAL EXCLUDED MIDDLE

    $[\![\ \text{EV}p\ ]\!]^{c,\langle e,w\rangle,g}$ is defined only if $\forall \langle e', w'\rangle \in \text{REASON}_{\iota x.\text{Holder}(x,e),w} : [p(e')(w')] \vee$
    $\forall \langle e', w'\rangle \in \text{REASON}_{\iota x.\text{Holder}(x,e),w} : [\neg p(e')(w')]$

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37. The principle of the Excluded Middle has been originally proposed for neg-raising predicates such as *believe* to account for data as in (i), and is often treated as a soft presupposition (Bartsch 1973; Gajewski 2007; Romoli 2013).

(i) I don't believe that there is water on Mars.
    ⤳ I believe that there isn't water on Mars.

  Recently, this principle has been argued to play a role outside of canonical neg-raising (Uegaki 2015; Winans 2016). Additional empirical support for treating evidentials as triggering an excluded middle inference comes from their behavior under negation. Cross-linguistically, evidentials escape the scope of clause-mate negation, and statements of the surface form $\neg[\text{EV}p]$ can only receive the interpretation $\text{EV}[\neg p]$ (de Haan 1997; Korotkova 2016; Murray 2017). Semantic literature attributes this behavior to the not-at-issue status of the information contributed by evidentials, an approach criticized in (Korotkova 2019). The excluded middle inference explains why evidentials cannot be targeted by negation without making assumptions about their discourse status. In this paper, I will not discuss the status of the inference, and leave broader applications of this approach for future research.

The semantics for an evidential question with the application of the Excluded Middle is given in (66):[38]

(66) $[\![\, Q_{Y/N}\, [\, \mathrm{Ev}p\,]\,]\!]^{c,\langle e,w\rangle,g}$
$= [\![\, Q_{Y/N}\,]\!]^{c,\langle e,w\rangle,g}(\lambda e'.\lambda w'.[\![\, \mathrm{Ev}\,]\!]^{c,\langle e',w'\rangle,g}(\lambda e''.\lambda w''.[\![\, p\,]\!]^{c,\langle e'',w''\rangle,g}))$
$= \{\forall\langle e',w'\rangle \in \mathrm{REASON}_{\iota x.\mathrm{Holder}(x,e),w} : [p(e')(w')],$
$\qquad \forall\langle e',w'\rangle \in \mathrm{REASON}_{\iota x.\mathrm{Holder}(x,e),w} : [\neg p(e')(w')]\}$

(67) is the derivation for the Bulgarian evidential question, repeated from (b).

(67) Bulgarian

a. *Context: Kit and I are hiking in the bear country and see fresh tracks. I am
clueless about such things, but Kit recently took a wilderness class and has
better judgment. I ask:*

Mečka li e   mina-**l**-a   ottuk?
bear   Q be.3SG.PRES pass-**IND**-SG.F from.here
'Dis a bear pass-EV here?'

b. LF: $[_{CP}\, Q_{Y/N}\, [\, \mathrm{Ev_{Inf}}\, [_{TP}\, \text{a bear passed here}]\,]\,]$

c. $[\![[_{CP}\, Q_{Y/N}\, [\, \mathrm{Ev_{Inf}}\, [_{TP}\, \text{a bear passed here}\,]\,]\,]\,]\!]^{c,\langle e,w\rangle,g}$
$= [\![Q_{Y/N}]\!]^{c,\langle e,w\rangle,g}$
$\quad (\lambda e'.\lambda w'.\, [\![\mathrm{Ev_{Inf}}]\!]^{c,\langle e',w'\rangle,g}(\lambda e''.\lambda w''.[\![\, [_{TP}\, \text{a bear passed here}\,]\,]\!]^{c,\langle e'',w''\rangle,g}))$
$= \{\forall\langle e',w'\rangle \in \mathrm{REASON\text{-}INF}_{\iota x.\mathrm{Holder}(x,e),w} : [\text{a bear passed here in } w' \text{ at } e'],$
$\quad \forall\langle e',w'\rangle \in \mathrm{REASON\text{-}INF}_{\iota x.\mathrm{Holder}(x,e),w} : [\neg\, [\text{a bear passed here in } w' \text{ at } e']]\}$

(67) correctly captures the intuition that evidential questions solicit responses based on evidence of a given type. However, the central goal of this section is to explain why the origo shifts in information-seeking questions. The origo is defined as the unique holder of the speech event, and, unlike in root declaratives, there are two events the origo can be anchored to: the event of asking and the event of answering (cf. the discussion of currently topical events in Murray 2012a). Crucially, the semantics above does not rigidly determine the origo.

I argue that the shifted interpretation arises not because there is a special mechanism that forces evidentials to shift (counter to most current approaches) but because a

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38. Using the excluded middle is not the only way to derive the semantics in (66). Zimmerman (2004a) treats German inferential *wohl* as modifying the illocutionary force operator. Another analytical option is to treat evidentials as contributing not-at-issue content that projects in questions. This is the approach advocated by Murray (Murray 2010, 2014, 2017). Based on examples such as (63), Murray argues that it is presupposed content in questions and analyzes the evidence type as a restriction imposed on the partition of an information state, which results in the origo having evidence for either the scope proposition or its complement.

non-shifted interpretation cannot be available in a genuine information-seeking question due to evidential subjectivity.

Recent research on the semantics and pragmatics of dialogue has established that a model of discourse, in addition to the common ground—a set of beliefs shared by the interlocutors (Stalnaker 1978)—should have a way of tracking individual beliefs and commitments of discourse participants (Gunlogson 2003, 2008; Farkas and Bruce 2010; Northrup 2014; Malamud and Stephenson 2015; Farkas and Roelofsen 2017 a.o.).

(68)   Let a discourse context C be $\langle$ DB_A, DB_B, $CG_{A,B}$ $\rangle$, where

    a.   A and B are discourse participants;

    b. $DB_A = \{\, p \mid \forall \langle e', w' \rangle \in \text{Dox}_{A,w} : p(e')(w') \,\}$;

    c. $DB_B = \{\, p \mid \forall \langle e', w' \rangle \in \text{Dox}_{B,w} : p(e')(w') \,\}$;

    d. $CG_{A,B} = DB_A \cap DB_B$.

A structure like this has been argued to be better suited for modeling the progression of discourse and dynamic effects of different utterances, including questions and reactions to them. In this paper, I will not provide a full account of evidentials in discourse. Instead, I only focus on the interaction between the semantics of evidentials and preconditions associated with different types of questions. Thus, one of the felicity conditions on the speech act of questioning is that the speaker does not know the answer (Hintikka 1962; Searle 1969).[39] We can say that the denotation of a question should not be part of the speaker's belief set, as illustrated for a polar question by speaker A in (69):[40]

(69)   CANONICAL QUESTIONS

$$\forall q.[q \in [\![\, ?p \,]\!]^{c, \langle e, w \rangle, g} \rightarrow q \notin DB_A]$$ (cf. Caponigro and Sprouse 2007:130)

Let us see what such conditions mean for an evidential question. Given the semantics provided in (66) and the felicity condition in (69), an evidential question should be felicitous as an ordinary information-seeking question if (70) holds:

(70)   CANONICAL QUESTIONS WITH EVIDENTIALS

$$\{\, \forall \langle e', w' \rangle \in \text{REASON}_{\iota x.\text{Holder}(x,e), w} : [p(e')(w')] \,\} \notin DB_A$$
$$\wedge \{\, \forall \langle e', w' \rangle \in \text{REASON}_{\iota x.\text{Holder}(x,e), w} : [\neg [p(e')(w')]] \} \notin DB_A$$

I have argued throughout the paper that evidentials encode a form of self-knowledge and that the origo has the highest authority over their evidential state. The event e in

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39. Other conditions include the expectation that the addressee may know the answer and will be willing to provide it.

40. I ignore the difference between private beliefs and public commitments.

(70) determines who the origo is, and it can be either the speaker or the addressee. If the origo is the addressee, the felicity condition is met. After all, the speaker does not have immediate access to the addressee's evidential state, so it makes sense to ask. And if the issue has been already settled in the previous discourse (for example, by the addressee's stating that they have relevant evidence for p), then this information would be part of the common ground and the question would not be felicitous.

If the origo is the speaker, then they are the only person to know whether they have relevant evidence for p (unless this information is already part of the common ground). Given that knowledge implies belief, this information should already be part of DB_A. In which case asking such a question would violate the felicity condition of a sincere inquiry.

One can imagine that the speaker has, for some reason, lost access to their evidential state and is inquiring about it. Whether or not such a situation is possible is a question for philosophy of mind. Here I am concerned with the linguistic behavior of evidentials. A sincere inquiry about one's own epistemic state would amount to requesting the addressee to assert one of the answers in (70), with the holder being not the addressee, but the speaker. However, as shown throughout the paper, evidentials in natural language cannot be used to attribute evidence to a third party. Therefore it is infelicitous for the origo to be anchored to the speaker in information-seeking questions, whether they have access to their knowledge or not. Coming back to the original evidential question in (b), whose semantics is given in (67), we can conclude that the the origo is the addressee for pragmatic reasons (71):

(71) Bulgarian

    a. *Context: Kit and I are hiking in the bear country and see fresh tracks. I am clueless about such things, but Kit recently took a wilderness class and has better judgment. I ask:*

        Mečka li e mina-**l**-a ottuk?
        bear Q be.3SG.PRES pass-**IND.PST**-SG.F from.here
        'Dis a bear pass here, given what you heard?'

    b. $[\![(71a)]\!]^{c,\langle e,w\rangle,g}$
        $= \{\forall \langle e',w'\rangle \in \text{REASON-INF}_{\text{Addressee},w} : [\text{a bear passed here in } w' \text{ at } e'],$
        $\forall \langle e',w'\rangle \in \text{REASON-INF}_{\text{Addressee},w} : [\neg [\text{a bear passed here in } w' \text{ at } e']]\}$

Previous approaches to the origo shift in questions argue that the shift is obligatory because speaker-oriented readings of evidentials are not attested. I propose an alternative route that is rooted in the interaction of pragmatics of information-seeking questions, conventional meaning of evidentials and the properties of cognitive processes they describe. I argue that it is natural for "point-of-view" phenomena to shift in questions, because questions, by default, are about the addressee's opinion. This

alone predicts that interrogative flip should be optional, which is borne out, for example, for expressions of spatial deixis, taste predicates and slifting parentheticals. I further argue that the shift looks obligatory with evidentials because speaker-oriented readings in information-seeking questions are in conflict with the fact that evidentials denote self-ascriptions of a mental state. Other, non-subjective, accounts of evidentiality do not have means to exclude the speaker-oriented reading without postulating a dedicated mechanism that forces evidentials to shift.[41] Even though the origo is often treated as a first-person element, it should be felicitous to ask sincere questions about oneself, as in (72), so it is the subjectivity of evidentials that is crucial.

(72)   Did I win the lottery?

The crux of my proposal is that it is infelicitous to ask questions related to self-knowledge. In this respect, we expect a similar behavior of other subjective expressions. This expectation is borne out. For example, Japanese experiencer predicates and Newari egophoric agreement are always anchored to the addressee in information-seeking questions. Their behavior is typically explained in syntactic terms (Tenny 2006; Hashimoto 2015; Zu 2018), but I suspect that an analysis along the lines I propose for evidentials may be possible as well. Additional support for a conceptual, rather than structural explanation comes from the behavior of experiencer predicates in English. As Gunlogson and Carlson (2016) note, experiential expressions with first-person subjects are often odd in information-seeking questions:[42]

(73)   Do ✓you/ #I have a headache?   (Gunlogson and Carlson 2016:182)

(74)   ✓Are you / #Am I hungry?

Gunglogson and Carlson link the oddness of examples like (73) and (74) to evidential restrictions: one does not ask questions about something they have the most direct evidence for. I hypothesize that the restriction is rooted in self-knowledge, a notion broader than experiences, as (76) demonstrates:

(75)   Do ✓you/ #I want coffee?

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41. Meriçli (2016) proposes that evidential statements are added to DB of the participant who utters the respective statement. Questions are modeled as sets of answers, and one of the answers to an evidential question will be added to the addressee's DB. However, nothing in this system explains why one cannot be committed to a third party having evidence, a fact that falls out naturally under my self-knowledge account.

42. (73)-(76) are fine with first person-subjects if it is a different kind of interrogative, see discussion in 5.3.

(76) Do ✓you/ #I hope to summit Mt. Rainier next spring?

I leave investigating the wider landscape of subjective expressions in questions for future research. Importantly, the analysis that I propose ultimately predicts that speaker-oriented readings should be possible even with subjective expressions in questions that are pragmatically different from canonical information-seeking questions. The next section shows that this prediction is borne out.

5.3   Questions that do not require ignorance

The purpose of canonical questions is to grow the common ground by gaining information that the speaker lacks and expects the addressee to be able and willing to provide. There are also other, non-canonical, varieties of question that are characterized by specialized pragmatic effects and, sometimes, by non-interrogative syntax and semantics (see an overview in Dayal 2016:268-292). This family includes a number of strategies by using which the speaker may signal that their communicative goal is not a mere inquiry for information. For example, rhetorical questions signal that the answer should already be known (Caponigro and Sprouse 2007; Biezma and Rawlins 2017), echo questions request to repeat what has already been said (Poschmann 2015; Beck and Reis 2018), and *wh*-declaratives presuppose that there is a question open in discourse (Biezma 2019).

I have argued in 5.2 that evidentials cannot be speaker-oriented in information-seeking questions due to a clash between the self-knowledge requirement imposed by evidentials and the ignorance requirement imposed by information-seeking questions. This account predicts that evidentials may be speaker-oriented in those questions that do not require the speaker to be ignorant. This prediction is borne out.

For example, evidentials can be used in rhetorical questions. As illustrated in (77), German hearsay *sollen* can be used in a question with *schon*, which is a marker of rhetoricity in interrogatives (see discussion and references in Biezma and Rawlins 2017).

(77) German

Wer soll   das schon gesagt haben?   [RHETORICAL Q]
who REP.3SG.PRES this RQ   say.PRT have.INF
'After all, who has said it, given what I/you/we heard?'

In rhetorical questions the answer is supposed to be already known to everyone, so the presence or lack of origo shift is hard to detect. A similar situation holds for self-addressed questions, which can be characterized as unanswerable or as ones that do not expect the addressee to reply (see discussion and references in Eckardt and Disselkamp 2019). Cross-linguistically, evidential-like elements are often used in such questions, which is translated into English as *I wonder* (Littell et al. 2010; Murray

2012b; Hara 2018; Eckardt and Beltrama 2019). For example, German inferential *wohl*, which can be used in canonical questions (78a), forms a self-addressed question combined with verb-end syntax (78b) (and because there is no expectation to reply, such questions can be more polite than their ordinary counterparts; Zimmerman 2004b):[43]

(78) German

    a. Wo   ist   wohl der Schlüssel?   [CANONICAL Q]
       where be.3SG.PRES wohl DEF key
       'Where, do you guess, is the key.'

    b. Wo   wohl der Schlüssel ist?   [SELF-ADDRESSED Q]
       where wohl DEF key   be.3SG.PRES
       'Where is the key, I wonder.'   (Eckardt and Beltrama 2019:8)

It has been argued that in self-addressed questions the speaker and the addressee are identical (Eckardt and Disselkamp 2019). Therefore, the origo shift is hard to detect. Thus, Garrett (2001) proposes that the shift does take place, but we just don't see it. Below I show that evidentials can be speaker-oriented also in those non-canonical questions that do not require the speaker and the addressee to be on the same epistemic page.

Ordinary questions are felicitous only if the speaker does not know the answer. There is a class of questions that are the opposite in this respect, namely, exam questions (also called quiz questions), which are asked to check the addressee's knowledge. Exam questions in English may have a special syntax with the *wh*-word remaining in situ (Kuno and Robinson 1972; Wachowicz 1974), but this is not obligatory and regular interrogative clauses often perform this function. The overall pragmatic contribution of exam questions can be described as eliciting a commitment to the true answer (cf. Lauer 2013; Biezma 2019). For my purposes the important part is the felicity condition (79) associated with exam questions, namely that the speaker A knows the answer:

(79) EXAM QUESTIONS

    $\exists q.[q \in [\![\ ?p\ ]\!]^{c,\langle e,w\rangle,g} \wedge q \in \mathrm{DB}_A]$ (cf. Caponigro and Sprouse 2007:131)

The prediction of my proposal is that evidentials may be speaker-oriented in exam questions. As (80) shows, the prediction is borne out.

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43. Some evidentials have been argued to only be used in self-addressed, but not in canonical, questions, for example, Gitksan inferential *ima* (Littell et al. 2010) and Italian presumptive future (Eckardt and Beltrama 2019). Eckardt and Beltrama offer an historical-semantic explanation to the pattern, but I will not have much to say about it.

(80) Bulgarian

    a. CANONICAL 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**-F	word	in	Bulgarian

      'Which of these is a word in Bulgarian, given what you know?'

    b. EXAM 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**-F	}	word	in

      bâlgarskija?
      Bulgarian
      'Which of these is a word in Bulgarian?'

In (80a), the speaker makes an inquiry for information and expects the addressee to base their reply on inference, so the origo is anchored to the addressee. In (80b), the speaker knows the answer, and is testing the addressee's knowledge. In the latter case, using the indirect evidential is infelicitous.

The infelicity of (80b) is not predicted in theories that hard-wire the origo shift to the syntax and/or semantics. If the distinction between information-seeking and exam questions is purely pragmatic, we do not expect any differences between (80a) and (80b). The exam question in (80b) does not differ semantically or syntactically from its canonical counterpart in (80a), therefore, we expect that the shift will take place in (80b). Such data are especially problematic for syntactic theories of interrogative flip (Speas and Tenny 2003; Tenny 2006; Woods 2014). According to those theories, the origo shift is a result of the addressee becoming the closest binder in interrogative clauses. However, if pragmatics is not taken into account, it is not clear what the difference between (80a) and (80b) is.[44] My pragmatic account, on the other hand, predicts that the origo may be the speaker in exam questions since the speaker already knows the answer and there is no conflict between the nature of the inquiry and the origo's evidential state.

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44. Zu (2018) proposes that many perspectival expressions are anchored to the seat of knowledge. In ordinary information-seeking questions, the seat of knowledge is the addressee, which accounts for interrogative flip. Zu further proposes that in rhetorical questions and exam questions the seat of knowledge is in fact the speaker, not the addressee, which predicts the lack of shift in those types of question. However, in her analysis the reference of seat of knowledge is linked to the clause type. Given that the clause type is the same in (80a) and (80b), it is still not clear how the difference between canonical questions and, for example, exam questions can arise in absence of syntactic differences.

Finally, yet another type of question that does not require the speaker's complete ignorance is instantiated by biased polar questions. Epistemic bias is an expectation on part of the speaker about the possible answer or about the addressee's information state. One way to realize bias in English is to use questions with preposed negation, as in (81), where the speaker wants to confirm the positive answer (see discussion and references in Gunlogson 2003; Reese 2007; Malamud and Stephenson 2015; Farkas and Roelofsen 2017; Romero et al. 2017; Jeong 2018).

(81) Don't you like sauerkraut?

There are different views on whether bias is rooted in semantics (cf. Romero and Han 2004) or pragmatics (cf. Gunlogson 2003; Farkas and Roelofsen 2017). Of importance here is the idea that biased questions are not naive inquiries for information. The account of evidentials that I advocate thus predicts that evidentials may be speaker-oriented in biased questions because, in the absence of complete ignorance requirement, there is no clash between the self-knowledge of evidentials and epistemic restrictions on the question. The prediction is borne out.

In Bulgarian, *nali* is used to convey positive bias (82a). As (82b) shows, evidentials can be used in biased questions.

(82) Bulgarian

a. BIASED QUESTION
    Context: I suspect that Ortcutt is a spy and ask to confirm this conclusion.

    Ortcutt e   špionin nali?
    Ortcutt be.3SG.PRES   spy   BIAS
    'Isn't Ortcutt a spy?'

b. BIASED QUESTION WITH AN EVIDENTIAL
    Context: I hear rumors that Ortcutt is a spy and ask to confirm that.

    Ortcutt bi-**l**   špionin nali?
    Ortcutt be-**IND**   spy   BIAS
    ≈ 'Ortcutt is a spy, *I heard*. Is that true?'

(82a) carries an epistemic bias introduced by the particle *nali*. It cannot be asked out of the blue and signals that the speaker seeks to confirm a pre-existing opinion. The same is true for an evidential biased question. In (82b), the speaker suspects, based on hearsay, that Ortcutt is a spy, and the goal of the question is to confirm this suspicion. To this end, the speaker's knowledge does not exclude the answer to the question, which in turn makes it possible for the origo to be the speaker in the pragmatic account I advocate. Specifically, my proposal predicts that the origo may be the speaker as long as there is no clash between ignorance about the answer and the origo's access to their evidential state.

The same situation holds for German *sollen* that can be speaker-oriented in biased questions, as (83b) illustrates. Unlike in English (cf. 81), negation occupies the same position in German biased questions and ordinary negative questions. The indefinite *eine* indicates that (83a) and (83b) are biased questions with high negation, as in ordinary questions with low negation one has to use the negative indefinite *keine* (as discussed in Romero and Han 2004:615).

(83)   German

    a.   BIASED QUESTION

        Hat   Peter nicht eine   Waffe beschafft?
        have.3SG.PRES Peter NEG   INDEF gun   purchase.PRT
        'Didn't Peter purchase a gun?'

    b.   BIASED QUESTION WITH *sollen*

        Soll   Peter nicht eine   Waffe beschafft   haben?
        REP.3SG.PRES Peter NEG   INDEF gun   purchase.PRT have.INF
        ≈'Peter purchased a gun, I heard. Is that true?'

San Roque et al. (2017) cite sentences similar to (82b) and (83b) to argue that the origo shift in questions is not universal. However, my claim in this paper is only about the universality of the origo shift in information-seeking questions. As has been argued extensively in the literature on biased questions, such questions differ at the very least pragmatically, and often semantically and syntactically, from canonical questions. If epistemic bias is always the speaker's (cf. Frana and Rawlins forth.), it then makes sense intuitively for the evidential to stay speaker-oriented as well. A compositional account of the interaction of bias and evidentiality is beyond the scope of this paper, see, for example, (Bhadra 2019, Frana and Menéndez-Benito forth.).

To reiterate, my account postulates that the availability of speaker-oriented readings depends on whether the question requires the speaker's ignorance. Canonical information-seeking questions (unbiased) are only felicitous if the speaker does not know the answer. In 5.2 I have shown that such questions are incompatible with the speaker's being ignorant about their evidential state, therefore the origo shifts to the addressee. The situation is different in other types of question. Thus, evidentials can be speaker-oriented in exam questions and in biased questions. Crucially, in my account the availability of speaker-oriented readings is decided on the construction-by-construction basis. This view correctly predicts that the same evidential may be addressee-oriented in canonical questions and speaker-oriented in other types of question, the situation attested in Bulgarian and German.

My account is in contrast with the account in (Bhadra 2019) who argues that the availability of speaker-oriented readings is decided on the language-by-language basis. Bhadra discusses cases in Bangla (Indo-Aryan) and Telugu (Dravidian) such that evidentials themselves are markers of epistemic bias. Given the incompatibility

of bias and genuine information-seeking questions, those evidentials are not used in information-seeking questions and do not have addressee-oriented readings. Bhadra shows that clauses with those evidentials are declaratives and proposes a language-specific connection between the presence of the origo shift and the clause type, confirmed by data from several other languages. However, by Bhadra's lights the shift takes place on a language-by-language basis. This does not explain why, for example, Bulgarian and German evidentials can have both a shifted interpretation in canonical questions and a non-shifted interpretation in biased questions. At the same time, my account is fully compatible with Bhadra's data. In some cases, as I have shown for Bulgarian and German, evidentials appear in constructions that independently signal bias. And in some other cases, as Bhadra shows for Bangla and Telugu, the presence of the evidential is needed to license bias. This micro-typology shows that a more thorough investigation of the interaction of bias and evidentiality is needed (cf. Frana and Rawlins forth.). I leave this investigation for future research.

My general goal here is not to parameterize when evidentials can be used in interrogatives sentences, but to explain why evidentials do not have speaker-oriented readings in canonical questions. To this end, I conclude that a pragmatic component is necessary in explaining the patterns of interrogative flip, a conclusion also made by (Eckardt and Beltrama 2019) with respect to self-addressed questions.

Summing up, the behavior of evidentials in information-seeking 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 have shown that theories hard-wiring 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 question, such as exam questions, which only differ from information-seeking questions at the level of pragmatics, and biased questions, which do not require the speaker's ignorance.

6   Conclusion

In this paper, I argue that evidentials describe self-knowledge and attribute to them a semantics of first-person mental states. I show that this novel account provides a unified explanation to the behavior of evidentials in dialogues, attitudes and questions.

First, I show that evidentials are always speaker-oriented in root declaratives, an

assumption that has been already present in the literature but not tested explicitly. This observation shows that evidentials differ from subjective expressions that allow non-autocentric readings, such as taste predicates, epistemic modals and appearance claims, and thus helps to delineate the space of analytical options suitable for evidentials.

Second, I provide a new explanation to non-challengeability, a property that characterizes the behavior of evidentials across languages and that has been previously attributed to the not-at-issue status of information. By capitalizing on the insights from philosophy of mind, I argue that non-challengeability of evidentials is an instance of immunity to correction that is associated with self-knowledge across the board.

Third, I show that evidentials have to be construed *de se* in attitudes and provide an account along the lines of *de se* binding. Unlike the shifting in attitudes, which can be explained in many existing accounts, this property had no account in the literature.

Finally, I provide a new explanation to the origo shift in questions. While there are languages where evidentials do not occur in interrogative clauses, there are no languages that allow speaker-oriented readings in canonical, information-seeking, questions. Previous accounts derive this fact by making use of an obligatory mechanism that determines the reference of the origo. I propose that the shift is best explained in Gricean terms.

In this paper, I concentrate on the semantics of evidentials and not on their pragmatic contribution. Previous literature addresses the latter only insofar as evidentials are treated as contributing not-at-issue content (Murray 2010, 2014, 2017; Northrup 2014). Under the analysis proposed here, discourse dynamics of evidentials should be similar to that of subjective content more generally. To this end, it has been argued that subjective content is akin to not-at-issue content in that it does not resolve any current questions (Umbach 2016). It has also been argued that subjective content is simply accepted automatically since the interlocutors have no ground to contest it(Stephenson 2007a; Malamud and Stephenson 2015). At the same time, Beltrama (2018) shows that some subjective assertions require a different type of response compared to their objective counterparts. The next logical step of the research reported here will be developing a discourse model that accommodates subjective assertions and fitting evidentials in that model.

I would like to conclude with an open question about the status of semantic categories. In typological research evidentiality is defined as a morphosyntactic category whose use is obligatory (Aikhenvald 2004). But many evidentials discussed here and elsewhere in semantic literature do not fit this definition, such as German *sollen* or Italian presumptive future. Across languages, evidentiality may take many shapes, such as focus particles in Cuzco Quechua (Faller 2002), illocutionary mood in Cheyenne (Murray 2016), part of the tense system in Turkish (Slobin and Akşu 1982), or modal verbs in German. Despite morphosyntactic diversity those expressions have much in common semantically, which suggests that they form a natural class at some level. In particular, I have argued that natural language conceptualizes evidence as a mental

state (cf. Lewis 1996) and that evidentials share a subjective core that is responsible for their interpretation across the range of environments. Of course, the problem of natural classes is not new, or unique to evidentiality. Thus, epistemic modals come in many shapes beyond the familiar *must* and *might* (cf. Arregui et al. 2017), and defining modality semantically is no easy task. The same goes for the purported class of taste predicates, delineating which is a perennial problem in semantics and philosophy of language (see discussion in Anand 2009). With evidentials, it is still not clear what may count as one, and much remains to be said about parameterizing cross-linguistic variation in this domain. I leave those issues for future research.

References

Aikhenvald, A. Y. (2004). *Evidentiality*. Oxford: Oxford University Press.

Amaral, P., C. Roberts, and E. A. Smith (2007). Review of *The Logic of Conventional Implicatures* by Chris Potts. *Linguistics and Philosophy 30*(6), 707–749.

Anand, P. (2006). *De de se*. Ph. D. thesis, Massachusetts Institute of Technology.

Anand, P. (2007). Re-expressing judgment. *Theoretical Linguistics 33*(2), 199–208.

Anand, P. (2009). Kinds of taste. Ms., UCSC.

Anand, P. and A. Brasoveanu (2010). Modal concord as modal modification. In M. Prinzhorn, V. Schmitt, and S. Zobel (Eds.), *Proceedings of Sinn und Bedeutung 14*, Vienna, pp. 19–36.

Anand, P. and V. Hacquard (2009). Epistemics with attitude. In *Proceedings of SALT 18*.

Anand, P. and V. Hacquard (2013). Epistemics and attitudes. *Semantics and Pragmatics 6*(8), 1–59.

Anand, P. and N. Korotkova (2018). Acquaintance content and obviation. In U. Sauerland and S. Solt (Eds.), *Proceedings of Sinn und Bedeutung 22*, Berlin, pp. 161–173. ZAS.

Anand, P. and N. Korotkova (2019a). *Find*. Talk presented at the workshop "Evaluative language", Paris, May 6-7, 2019.

Anand, P. and N. Korotkova (2019b). The metasemantics of taste: an argument from *de re* and 'non main-predicate' position. Ms., UC Santa Cruz and University of Konstanz. Under review in *Linguistics and Philosophy*.

Anand, P. and A. Nevins (2004). Shifty operators in changing contexts. In R. B. Young (Ed.), *Proceedings of SALT 14*, pp. 20–37.

AnderBois, S. (2014). On the exceptional status of reportative evidentials. In T. Snider, S. D'Antonio, and M. Weigand (Eds.), *Semantics and Linguistic Theory (SALT) 24*, pp. 234–254. LSA and CLC Publications.

AnderBois, S. (2018). An illocutionary account of reportative evidentials in imperatives. In D. Burgdorf, J. Collard, S. Maspong, and B. Stefánsdóttir (Eds.), *Semantics and Linguistic Theory 27*, pp. 459–479.

Arregui, A., A. Salanova, and M. L. Rivero (Eds.) (2017). *Modality across syntactic categories*. Oxford Studies in Theoretical Linguistics. Oxoford University Press.

Aydede, M. (2013). Pain. In E. N. Zalta (Ed.), *The Stanford Encyclopedia of Philosophy* (Spring 2013 ed.).

Bar-On, D. (2004). *Speaking My Mind: Expression and Self-Knowledge*. Oxford: Calrendon Press.

Barlew, J. (2016). Point of view and the semantics of spatial expressions in Mushunguli and English. *Journal of Semantics 33*(2), 215–267.

Bartsch, R. (1973). "negative transportation" gibt es nicht. *Linguistische Berichte 27*, 1–7.

Bary, C. and E. Maier (2018). The landscape of speech reporting. Ms.

Beck, S. and M. Reis (2018). On the form and interpretation of echo *wh*-questions. *Journal of Semantics 35*(3), 369–408.

Beltrama, A. (2018). Subjective assertions are weak: exploring the illocutionary profile of perspective-dependent predicates. In U. Sauerland and S. Solt (Eds.), *Proceedings of Sinn und Bedeutung 22*, Berlin, pp. 55–72. ZAS.

Bhadra, D. (2018). Evidentials are syntax-sensitive: The view from Bangla. *Glossa: A journal of general linguistics 3*(1), 1–39.

Bhadra, D. (2019). The dynamics of evidentials in questions. Ms.

Bhatt, R. and R. Pancheva (1998). Genericity, implicit arguments, and control. In *Proceedings of* Student Conference in Linguistics 7.

Biezma, M. (2019). Non-informative assertions. Ms., University of Konstanz / University of Massachusetts, Amherst.

Biezma, M. and K. Rawlins (2017). Rhetorical questions: Severing asking from questioning. In D. Burgdorf, J. Collard, S. Maspong, and B. Stefánsdóttir (Eds.), *Proceedings of the 27th Semantics and Linguistic Theory Conference*, pp. 302–322.

Bittner, M. (2012). Perspectival discourse referents for indexicals. In H. Greene (Ed.), *SULA 7: Proceedings of the Seventh Meeting on the Semantics of Under-represented Languages in the Americas*.

Boeder, W. (2000). Evidentiality in Georgian. In L. Johanson and B. Utas (Eds.), *Evidentials: Turkic, Iranian and Neighbouring Languages*. Mouton de Gruyter.

Bolinger, D. (1968). Post-posed main phrases: An English rule for the Romance subjunctive. *Canadian Journal of Linguistics 14*(1), 3–30.

Bowler, M. (2018). *Aspect and evidentiality*. Ph. D. thesis, University of California, Los Angeles.

Bowler, M. (2019). Aspect and evidentiality. Talk given at the workshop "Expressing evidence", University of Konstanz, Germany, June 6-8, 2019.

Bybee, J. (1985). *Morphology: A Study of the Relation between Meaning and Form*. Amsterdam: John Benjamins.

Bylinina, L., Y. Sudo, and E. McCready (2014). The landscape of perspective-sensitivity. Talk presented at the workshop "Pronouns in embedded contexts at the syntax-semantics interface", University of Tübingen, November 7-9, 2014.

Caponigro, I. and J. Sprouse (2007). Rhetorical questions as questions. In E. Puig-Waldmüller (Ed.), *Proceedings of* Sinn und Bedeutung (SuB) 11, pp. 121–133.

Charlow, S. and Y. Sharvit (2014). Bound 'de re' and the LFs of attitude reports. *Semantics and Pragmatics 7*.

Charnavel, I. (Forth). Logophoricity and locality: A view from French anaphors. *Linguistic Inquiry*.

Chierchia, G. (1989). Anaphora and attitudes de se. In R. Bartsch, J. van Benthem, and P. van Emde Boas (Eds.), *Language in Context*. Foris.

Cinque, G. (1999). *Adverbs and functional heads: A cross-linguistic perspective*. Oxford Studies in Comparative Syntax. OUP.

Condoravdi, C. and S. Lauer (2011). Performative verbs and performative acts. In I. Reich (Ed.), *Proceedings of Sinn and Bedeutung (SuB) 15*, pp. 149–164.

Condoravdi, C. and S. Lauer (2017). Conditional imperatives and endorsement. In *Proceedings of NELS 47*.

Coppock, E. (2018). Outlook-based semantics. *Linguistics and Philosophy 41*(2), 125–164.

Coppock, E. and S. Wechsler (2018). The proper treatment of egophoricity in Kathmandu Newari. In K. Jaszczolt and M. Huang (Eds.), *Expressing the Self: Cultural Diversity and Cognitive Universals*. Oxford: OUP: Oxford University Press.

Davidson, D. (1969). The individuation of events. In N. Rescher (Ed.), *Essays in honor of Carl G. Hempel*, pp. 216–234. Dordrecht: Springer.

Davis, C. and Y. Hara (2014). Evidentiality as a causal relation: A case study from Japanese *youda*. In C. Piñón (Ed.), *Empirical Issues in Syntax and Semantics 10*, pp. 179–196.

Davis, C., C. Potts, and M. Speas (2007). The pragmatic values of evidential sentences. In T. Friedman and M. Gibson (Eds.), *Semantics and Linguistic Theory 17*, Ithaca, NY, pp. 71–88. Cornell University.

Dayal, V. (2016). *Questions*. Oxford: Oxford University Press.

Deal, A. R. (2017). Shifty asymmetries: universals and variation in shifty indexicality. Ms., UC Berkeley.

DeRose, K. (1991). Epistemic possibilities. *Philosophical Review 100*, 581–605.

Eckardt, R. (2014). *The Semantics of Free Indirect Discourse: How Texts Allow Us to Mind-read and Eavesdrop*. Leiden: Brill.

Eckardt, R. and A. Beltrama (2019). Evidentials and questions. In C. Piñón (Ed.), *Empirical Issues in Syntax and Semantics 12*, pp. 1–35. CNRS.

Eckardt, R. and G. Disselkamp (2019). Self-addressed questions and indexicality—The case of Korean. In M. T. Espinal, E. Castroviejo, M. Leonetti, L. McNally, and C. Real-Puigdollers (Eds.), *Proceedings of Sinn und Bedeutung 23*, Volume 1, pp. 383–398.

Egan, A., J. Hawthorne, and B. Weatherson (2005). Epistemic modals in context. In G. Preyer and G. Peter (Eds.), *Contextualism in Philosophy: Knowledge, Meaning and Truth*, pp. 131–169. Oxford University Press.

Fabricius-Hansen, C. and K. J. Sæbø (2004). In a mediative mood: The semantics of the german reportive subjunctive. *Natural Language Semantics 12*(3), 213–257.

Faller, M. (2002). *Semantics and Pragmatics of Evidentials in Cuzco Quechua*. PhD dissertation, Stanford.

Faller, M. (2007). Evidentiality above and below speech acts. Ms., University of Manchester.

Faller, M. (2011). A possible worlds semantics for Cuzco Quechua evidentials. In N. Li and D. Lutz (Eds.), *Semantics and Linguistic Theory (SALT) 20*, pp. 660–683. CLC Publications.

Faller, M. (2012). Evidential scalar implicatures. *Linguistics and Philosophy 35*, 285–312.

Farkas, D. (1997). Evaluation indices and scope. In *Ways of Scope Taking*, pp. 183–215. Dordrecht: Spiringer Netherlands.

Farkas, D. and K. Bruce (2010). On reacting to assertions and polar questions. *Journal of Semantics 27*(1), 81–118.

Farkas, D. and F. Roelofsen (2017). Division of labor in the interpretation of declaratives and interrogatives. *Journal of Semantics 34*(2), 237–289.

Fillmore, C. J. (1971). *Lectures on deixis*. CSLI Publications.

von Fintel, K. (2004). Would you believe it? The King of France is back! presuppositions and truth-value intuitions. In M. Reimer and A. Bezuidenhout (Eds.), *Descriptions and Beyond*. Oxford: OUP.

von Fintel, K. and A. S. Gillies (2008a). CIA leaks. *Philosophical Review 117*(1), 77–98.

von Fintel, K. and A. S. Gillies (2008b). An opinionated quide to epistemic modality. In T. S. Gendler and J. Hawthorne (Eds.), *Oxford Studies in Epistemology*, Volume 2, pp. 32–62. Oxford: Oxford University Press.

von Fintel, K. and A. S. Gillies (2010). Must . . . stay . . . strong! *Natural Language Semantics 18*(4), 351–383.

von Fintel, K. and A. S. Gillies (2011). 'Might' made right. In A. Egan and B. Weatherson (Eds.), *Epistemic Modality*, pp. 108–130. Oxford University Press.

von Fintel, K. and I. Heim (2011). Intensional semantics. MIT Lecture notes, http://web.mit.edu/fintel/fintel-heim-intensional.pdf.

Floyd, S., E. Norcliffe, and L. S. Roque (Eds.) (2018). *Egophoricity*. Amsterdam: John Benjamins.

Frana, I. and P. Menéndez-Benito (Forth). Bias and evidence. the case of the evidential future in Italian and Spanish. In *Proceedings of Semantics and Linguistic Theory 2019*.

Frana, I. and K. Rawlins (Forth). Attitudes in discourse: Italian polar questions and the particle *mica*. *Semantics and Pragmatics*.

Gajewski, J. (2004). Evidentiality in Zazaki. In M. Kenstowicz (Ed.), *Studies in Zazaki Grammar*, Volume 6 of *MIT Working Papers on Endangered and Less Familiar Languages*. MIT Press. http://archive.is/QDs8P.

Gajewski, J. (2007). Neg-raising and polarity. *Linguistics and Philosophy 30*, 289–328.

García-Carpintero, M. (2015). *De se* thoughts and immunity to error through misidentification. *Synthese*.

Garrett, E. J. (2001). *Evidentiality and Assertion in Tibetan*. PhD dissertation, University of California, Los Angeles.

Gärtner, H.-M. and M. Steinbach (2006). A skeptical note on the syntax of speech acts and point of view. In P. Brandt and E. Fuss (Eds.), *Form, Structure, Grammar*, pp. 213–222. Berlin: Akademie-Verlag.

Gertler, B. (2011). *Self-Knowledge*. New York: Routledge.

Gertler, B. (2017). Self-knowledge. In E. N. Zalta (Ed.), *The Stanford Encyclopedia of Philosophy* (Fall 2017 ed.). Metaphysics Research Lab, Stanford University.

Giannakidou, A. (2011). Negative and positive polarity items: licensing, compositionality and variation. In C. Maienborn, K. von Heusinger, and P. Portner (Eds.), *Semantics: An International Handbook of Natural Language Meaning*, pp. 1660–1712. Mouton de Gruyter.

Grønn, A. and A. von Stechow (2010). Complement tense in contrast: The SOT parameter in Russian. In A. Grønn and I. Marjanović (Eds.), *Russian in Contrast. Grammar*, Volume 2 of *Oslo Studies in Language*, pp. 109–153.

Gunlogson, C. (2003). *True to Form: Rising and Falling Declaratives as Questions in English*. New York: Routledge.

Gunlogson, C. (2008). The question of commitment. *Belgian Journal of Linguistics 22*, 101–136.

Gunlogson, C. and G. Carlson (2016). Predicates of experience. In C. Meier and J. van Wijnbergen-Huitink (Eds.), *Subjective Meaning: Alternatives to Relativism*, pp. 169–200. De Gruyter.

de Haan, F. (1997). *The Interaction of Modality and Negation: A Typological Study*. Outstanding dissertations in linguistics. Garland.

de Haan, F. (2013a). Coding of evidentiality. In M. S. Dryer and M. Haspelmath (Eds.), *The World Atlas of Language Structures Online*. Leipzig: Max Planck Institute for Evolutionary Anthropology.

de Haan, F. (2013b). Semantic distinctions of evidentiality. In M. S. Dryer and M. Haspelmath (Eds.), *The World Atlas of Language Structures Online*. Leipzig: Max Planck Institute for Evolutionary Anthropology.

Hacking, I. (1967). Possibility. *The Philosophical Review 76*(2), 143–168.

Hacquard, V. (2006). *Aspects of Modality*. Ph. D. thesis, Massachusetts Institute of Technology.

Hacquard, V. (2010). On the event relativity of modal auxiliaries. *Natural Language Semantics 18*(1), 79–114.

Haddican, W., A. Holmberg, H. Tanaka, and G. Tsoulas (2014). Interrogative slifting in English. *Lingua 138*, 86–106.

Hamblin, C. L. (1973). Questions in Montague English. *Foundations of Language 10*, 41–53.

Hara, Y. (2018). *Daroo* as an entertain modal: an inquisitive approach. In S. Fukuda, M. Shin Kim, M.-J. Park, and H. M. Cook (Eds.), *Japanese/Korean Linguistics*, Volume 25.

Harris, J. A. and C. Potts (2009). Perspective-shifting with appositives and expressives. *Linguistics and Philosophy 32*(6), 523–552.

Hashimoto, M. (2015). *Experiencing in Japanese: The Experiencer Restriction across Clausal Types*. Ph. D. thesis, University of Massachusetts Amherst.

Heim, I. and A. Kratzer (1998). *Semantics in Generative Grammar*. Blackwell.

Hintikka, J. (1962). *Knowledge and Belief*. Cornell University Press.

Hintikka, J. (1969). Semantics for propositional attitudes. In J. Davis, D. Hockney, and W. Wilson (Eds.), *Philosophical Logic*, pp. 21–45. Dordrecht: Reidel.

Huitink, J. (2012). Modal concord: A case study of Dutch. *Journal of Semantics 29*(3), 403–437.

Hunter, J. (2016). Reports in discourse. *Dialogue and Discourse 7*(4).

Hunter, J. and N. Asher (2016). Shapes of conversation and at-issue content. In M. Moroney, C.-R. Little, J. Collard, and D. Burgdor (Eds.), *Proceedings of SALT 26*, pp. 1022–1042.

Irimia, M. A. (2018). Pragmatics or morpho-syntax? The encoding of indirect evidentiality in Romanian. *Journal of Pragmatics 128*, 148–160.

Izvorski, R. (1997). The present perfect as an epistemic modal. In A. Lawson (Ed.), *Semantics and Linguistic Theory (SALT) 7*, pp. 222–239. CLC Publications.

Jasinskaja, K. (2016). Not at issue any more. Ms., University of Cologne.

Jaszczolt, K. and M. Huang (Eds.) (2018). *Expressing the Self: Cultural Diversity and Cognitive Universals*. Oxford University Press.

Jeong, S. (2018). Intonation and sentence type conventions: Two types of rising declaratives. *Journal of Semantics 35*, 305–356.

Kalsang, J. Garfield, M. Speas, and J. de Villiers (2013). Direct evidentials, case, tense and aspect in Tibetan: evidence for a general theory of the semantics of evidential. *Natural Language and Linguistic Theory 31*(2), 517–561.

Kaplan, D. (1977/1989). Demonstratives. In J. Almog, J. Perry, and H. Wettstein (Eds.), *Themes from Kaplan*, pp. 481–563. OUP.

Karttunen, L. (1977). The syntax and semantics of questions. *Linguistics and Philosophy 1*, 1–44.

Kennedy, C. and M. Willer (2016). Subjective attitudes and counterstance contingency. In M. Moroney, C.-R. Little, J. Collard, and D. Burgdorf (Eds.), *Proceedings of the 26th Semantics and Linguistic Theory Conference*, pp. 913–933.

Keshet, E. (2008). *Good intensions: Paving Two Roads to a Theory of the* De re/De dicto *Distinction*. Ph. D. thesis, Massachusetts Institute of Technology.

Kierstead, G. (2015). Projectivity and the Tagalog Reportative Evidential. Master's thesis, Ohio State University.

Knobe, J. and S. Yalcin (2014). Epistemic modals and context: Experimental data. *Semantics and Pragmatics 7*(Article 10), 10–21.

Koev, T. (2013). *Apposition and the structure of discourse*. Ph. D. thesis, Rutgers, The State University of New Jersey.

Koev, T. (2017). Evidentiality, learning events and spatiotemporal distance: The view from Bulgarian. *Journal of Semantics 34*(1), 1–41.

Koev, T. (2019). Strong beliefs, weak commitments. In T. M. Espinal (Ed.), *Proceedings of Sinn und Bedeutung 23*, Universitat Autònoma de Barcelona, Bellaterra (Cerdanyola del Vallès), pp. 557–574.

Kölbel, M. (2003). Faultless diasgreement. *Proceedings of the Aristotelian Society 104*, 53–73.

Koring, L. (2013). *Seemingly similar: Subjects and displacement in grammar, processing, and acquisition*. Ph. D. thesis, Utrecht University.

Korotkova, N. (2012). Evidentiality in the Georgian tense and aspect system. Ms., UCLA.

Korotkova, N. (2015). Evidentials in attitudes: do's and dont's. In E. Csipak and H. Zeijlstra (Eds.), *Proceedings of Sinn und Bedeutung (SuB) 19*, pp. 340–357.

Korotkova, N. (2016). *Heterogeneity and Universality in the Evidential Domain*. PhD dissertation, University of California, Los Angeles.

Korotkova, N. (2017). Evidentials and (relayed) speech acts: Hearsay as quotation.

In S. D'Antonio, M. Moroney, and C. R. Little (Eds.), *Semantics and Linguistic Theory (SALT) 25*, pp. 676–694. LSA Open Journal Systems.

Korotkova, N. (2019). Status of the evidential requirement. Ms., University of Konstanz.

Korotkova, N. (Forth). The embedding puzzle: Constraints on evidentials in complement clauses. *Linguistic Inquiry*.

Kratzer, A. (1977). What 'Must' and 'Can' must and can mean. *Linguistics and Philosophy 1*, 337–355.

Kratzer, A. (1981). The notional category of modality. In H.-J. Eikmeyer and H. Rieser (Eds.), *Words, Worlds, and Contexts*, pp. 38–74. de Gruyter.

Kratzer, A. (1991). Modality. In A. von Stechow and D. Wunderlich (Eds.), *Semantics: An International Handbook of Contemporary Research*, pp. 639–650. de Gruyter.

Kratzer, A. (2009). Making a pronoun: Fake indexicals as windows into the properties of pronouns. *Linguistic Inquiry 40*(2), 187–237.

Krawczyk, E. A. (2012). *Inferred Propositions and the Expression of the Evidence Relation in Natural Language. Evidentiality in Central Alaskan Yup'ik Eskimo and English*. Ph. D. thesis, Georgetown University.

Krifka, M. (2011). Questions. In K. von Heusinger, C. Maienborn, and P. Portner (Eds.), *Semantics: An International Handbook of Natural Language Meaning*, Volume 2, pp. 1742–1785. de Gruyter.

Krifka, M. (2014). Embedding illocutionary acts. In T. Roeper and M. Speas (Eds.), *Recursion: Complexity in Cognition*, pp. 59–88. Springer.

Krifka, M. (2015). Bias in commitment space semantics: Declarative questions, negated questions, and question tags. In S. D'Antonio, M. Moroney, and C. R. Little (Eds.), *Semantics and Linguistic Theory (SALT) 25*, pp. 328–345. LSA Open Journal Systems.

Krifka, M. (2017). Epistemic, evidential and discourse modalities in commitment space semantics. Handout of the talk at the workshop "Not-At-Issue-Meaning and Information Structure", University of Oslo, May 8-10, 2017.

Kuno, S. and J. J. Robinson (1972). Mutiple wh questions. *Linguistic Inquiry 3*(4), 463–487.

Kuroda, S.-Y. (1965). *Generative Grammatical Studies in The Japanese Language*. Ph. D. thesis, MIT.

Lasersohn, P. (2005). Context dependence, disagreement, and predicates of personal taste. *Linguistics and Philosophy 28*(6), 643–686.

Lassiter, D. (2016). *Must*, knowledge and (in)directness. *Natural Language Semantics 24*(2), 117–163.

Lauer, S. (2013). *Towards a dynamic pragmatics*. PhD dissertation, Stanford.

Lee, J. (2011). *Evidentiality and its Interaction with Tense: Evidence from Korean*. Ph. D. thesis, Ohio State University.

Lee, J. (2013). Temporal constraints on the meaning of evidentiality. *Natural Language Semantics 21*(1), 1–41.

Lewis, D. (1979). Attitudes *de dicto* and *de se*. *Philosophical Review 88*(4), 513–543.

Lewis, D. (1996). Elusive knowledge. *Australian Journal of Philosophy 74*(4), 549–567.

Lim, D. (2010). *Evidentials as interrogatives: A case study from Korean*. PhD dissertation, USC.

Lim, D. and C. Lee (2012). Perspective shift of Korean evidentials and the effect of contexts. In *Proceedings of SALT 22*, pp. 26–42.

Littell, P., L. Matthewson, and T. Peterson (2010). On the semantics of conjectural questions. In T. Peterson and U. Sauerland (Eds.), *Evidence from evidentials*, Volume 28 of *University of British Columbia Working papers in Linguistics*, pp. 89–104.

Lyons, J. (1977). *Semantics (vols I & II)*. Cambridge: CUP.

MacFarlane, J. (2014). *Assessment Sensitivity: Relative Truth and Its Applications*. Oxford University Press.

Maier, E. (2010). Presupposing acquaintance: a unified semantics for de dicto, de re and de se belief reports. *Linguistics and Philosophy 32*, 429–474.

Major, T. (2019). Revisiting the syntax of monsters in Uyghur. Ms., UCLA.

Malamud, S. and T. Stephenson (2015). Three ways to avoid commitments: Declarative force modifiers in the conversational scoreboard. *Journal of Semantics 32*(2), 275–311.

Matthewson, L. (2011). On apparently non-modal evidentials. In O. Bonami and P. C. Hofherr (Eds.), *Empirical Issues in Syntax and Semantics*, Volume 8, pp. 333–357.

Matthewson, L. (2012). Evidence about evidentials: Where fieldwork meets theory. In B. Stolterfoht and S. Featherston (Eds.), *Empirical Approaches to Linguistic Theory: Studies in Meaning and Structure*, pp. 85–114. de Gruyter Mouton.

Matthewson, L., H. Davis, and H. Rullman (2007). Evidentials as epistemic modals: Evidence from St'át'imcets. In J. van Craenenbroeck (Ed.), *Linguistic Variation Yearbook*, Volume 7, pp. 201–254. Amsterdam: John Benjamins.

Matthewson, L. and Y. Hirayama (2019). Temporal evidentials without tense. Talk presented at the workshop *Expressing evidence*, University of Konstanz, Germany, June 6-8, 2019.

McCready, E. (2007). Context shifting in questions and elsewhere. In E. Puig-Waldmuller (Ed.), *Proceedings of Sinn und Bedeutung 11*, pp. 433–447.

McCready, E. (2010). Evidential universals. In T. Peterson and U. Sauerland (Eds.), *Evidence from evidentials*, pp. 105–127.

McCready, E. (2014). What is evidence in natural language. In E. McCready, K. Yabushita, and K. Yoshimoto (Eds.), *Formal Approaches to Semantics and Pragmatics: Japanese and beyond*, pp. 155–180. Springer.

McCready, E. (2015). *Reliability in pragmatics*. Oxford: Oxford University Press.

McCready, E. and N. Ogata (2007). Evidentiality, modality and probability. *Linguistics and Philosophy 30*(2), 147–206.

Meriçli, B. (2016). Modeling Indirect Evidence. Master's thesis, University of California, Santa Cruz.

Moltmann, F. (2012). Two kinds of first-person-oriented content. *Synthese 184*(2), 157–177.

Morgan, J. (1970). On the criterion of identity for noun phrase deletion. In *Papers from the Sixth Regional Meeting, Chicago Linguistic Society*, pp. 380–389.

Močnik, M. (2019). Slovenian 'dopuščati' and the semantics of epistemic modals. In *Proceedings of Formal Approaches to Slavic Languages 27*.

Muñoz, P. (2019). Acquaintance inferences as direct evidential effects. Talk presented at the workshop "Expressing evidence", University of Konstanz, Germany, June 6-8, 2019.

Murray, S. (2010). *Evidentiality and the Structure of Speech Acts*. PhD dissertation, Rutgers.

Murray, S. (2012a). The indexical component of evidentiality. Talk given at the workshop "Meaning as Use: Indexality and Expressives" during North American Summer School on Language, Logic and Information (NASSLLI) 2012 in Austin, http://conf.ling.cornell.edu/sem/NASSLLI.pdf.

Murray, S. (2012b). Quantificational and illocutionary variability in Cheyenne. In E. Bogal-Allbritten (Ed.), *Proceedings of SULA 6: Semantics of Under-Represented Languages in the Americas*, Amherst, MA, pp. 149ï£¡170. GLSA publications.

Murray, S. (2014). Varieties of update. *Semantics and Pragmatics 7*(2), 1–53.

Murray, S. (2016). Evidentiality and illocutionary mood in Cheyenne. *International Journal of American Linguistics 82*(4), 487–517.

Murray, S. E. (2017). *The Semantics of Evidentials*. Oxford: Oxford University Press.

Nikolaeva, I. (1999). The semantics of Northern Ostyak evidentials. *Journal de la Sociéte Finno Ougrienne 88*, 131–159.

Ninan, D. (2014). Taste predicates and the acquaintance inference. In T. Snider, S. D'Antonio, and M. Weigand (Eds.), *Proceedings of Semantics and Linguistic Theory 24*, pp. 290–309. LS.

Nishigauchi, T. (2014). Reflexive binding: Awareness and empathy from a syntactic point of view. *Journal of East Asian Linguistics 23*, 157–206.

Northrup, O. (2014). *Grounds for commitment*. Ph. D. thesis, University of California, Santa Cruz.

Orlandi, N. (2014). *The Innocent Eye: Why Vision is not a Cognitive Process*. New York: Oxford University Press.

Özyildiz, D. (2012). When *I* is not me: A preliminary case study of shifted indexicals in Turkish. Ms., École Normale Supérieure.

Partee, B. H. (1989). Binding implicit variables in quantified contexts. In C. Wiltshire, B. Music, and R. Graczyk (Eds.), *Papers from the 25th Regional Meeting of the Chicago Linguistic Society*, pp. 342–365.

Patel-Grosz, P. (Forth). Pronominal typology and the *de se/de re* distinction. *Linguistics and Philosophy*.

Pearson, H. (2013a). A judge-free semantics for predicates of personal taste. *Journal of Semantics 30*(1), 103–154.

Pearson, H. (2013b). *The sense of self: topics in the semantics of* de se *expressions*. Ph. D. thesis, Harvard.

Pearson, H. (2015). The interpretation of the logophoric pronoun in Ewe. *Natural Language Semantics 23*(2), 77–118.

Pearson, H. (2016). The semantics of partial control. *Natural Language and Linguistic Theory 34*(2), 691–738.

Pearson, H. (2018). Counterfactual de se. *Semantics and Pragmatics 11*. Early access.

Percus, O. (2000). Constraints on some other variables in syntax. *Natural Language Semantics 8*(3), 173–229.

Perry, J. (1979). The problem of the essential indexical. *Noûs 1*(13), 3–21.

Peterson, T. (2010). *Epistemic Modality and Evidentiality in Gitksan at the Semantics-Pragmatics Interface*. Ph. D. thesis, University of British Columbia.

Peterson, T. (Forth). Evidentiality and pragmatic blocking in Gitksan. *Natural Language Semantics*.

Podobryaev, A. (2017). Three routes to person indexicality. *Natural Language Semantics 25*(4), 329–354.

Portner, P. (1997). The semantics of mood, complementation and conversational force. *Natural Language Semantics 5*(2), 167–212.

Portner, P. (2006). Comment on Faller's paper. Handout of the commentary at the *Workshop on Philosophy and Linguistics*, University of Michigan.

Poschmann, C. (2015). *Echo-Fragen. Vom Satztyp zur Fragebedeutung.* De Gruyter.

Potts, C. (2002). The syntax and semantics of *As*-parentheticals. *Natural Language and Linguistic Theory 20*(3), 623–689.

Potts, C. (2005). *The Logic of Conventional Implicatures*. Oxford: OUP.

Potts, C. (2006). How far can pragmatic mechanisms take us? *Theoretical Linguistics 32*(3), 307–320.

Prosser, S. and F. Recanati (Eds.) (2012). *Immunity to error through misidentification: New essays*. Cambridge: Cambridge Univeristy Press.

Reese, B. (2007). *Bias in Questions*. Ph. D. thesis, University of Texas, Austin.

Reinhart, T. (1983). Point of view in language: the use of parentheticals. In G. Rauh (Ed.), *Essays on deixis*, pp. 169–194. Tübingen: Narr.

Reis, M. (2013). Dt. finden und "subjektive Bedeutung". *Linguistische Berichte 2013*(236), 389–426.

Roberts, C. (2015a). The character of epistemic modality: Evidentiality, indexicality, and what's at issue. Ms., The Ohio State University.

Roberts, C. (2015b). Indexicality: de se semantics and pragmatics. Ms., The Ohio State University.

Romero, M., A. Arnhold, B. Braun, and F. Domaneschi (2017). Negative polar question types in English. In A. Lamont and K. Tetzloff (Eds.), *Proceedings of the North East Linguistic Society 47*, Volume 3, Amherst, MA, pp. 35–48. GLSA.

Romero, M. and C.-H. Han (2004). On negative *Yes/No* questions. *Linguistics and Philosophy 27*, 609–658.

Romoli, J. (2013). A scalar implicature-based approach to Neg-Raising. *Linguistics and Philosophy 36*(291-353).

Rooryck, J. (2001a). Evidentiality, part I. *Glot International 5*(4), 125–133.

Rooryck, J. (2001b). Evidentiality, part II. *Glot International 5*(5), 161–168.

Ross, J. R. (1973). Slifting. In M. Gross, M. Halle, and M. Schützenburger (Eds.), *The Formal Analysis of Natural Languages*, pp. 133–169. Paris: Mouton.

Rudolph, R. (2019). *Talking about Appearances: Experience, Evaluation, and Evidence in Discourse*. Ph. D. thesis, University of California, Berkeley.

Rullman, H. and L. Matthewson (Forth.). Towards a theory of modal-temporal interaction. *Language*. Advance online publication on Project MUSE.

San Roque, L., S. Floyd, and E. Norcliffe (2017). Evidentiality and interrogativity. *Lingua 186-187*, 120–143.

Santorio, P. (2014). On the plurality of indices. Ms., University of Leeds.

Sauerland, U. and M. Schenner (2007). Embedded evidentials in Bulgarian. In E. Puig-Waldmuller (Ed.), *Proceedings of Sinn und Bedeutung 11*, pp. 495–509.

Scheffler, T. (2013). *Two-Dimensional Semantics. Clausal Adjuncts and Complements*. DeGruyter.

Schenner, M. (2010a). Embedded evidentials in German. In G. Diewald and E. Smirnova (Eds.), *Linguistic realization of evidentiality in European languages*, pp. 157–185. Mouton de Gruyter.

Schenner, M. (2010b). Evidentials in complex sentences: Foundational issues and data from German and Turkish. In T. Peterson and U. Sauerland (Eds.), *Evidence from evidentials*, pp. 183–220. Vancouver: University of British Columbia.

Schlenker, P. (2003). A plea for monsters. *Linguistics and Philosophy 26*(1), 29–120.

Schlenker, P. (2005). The lazy Frenchman's approach to the subjunctive. In T. Geerts, I. van Ginneken, and H. Jacobs (Eds.), *Romance Languages and Linguistic Theory 2003. Selected papers from "Going Romance" 2003, Nijmegen, 20âĂŞ22 November*, Amsterdam/Philadelphia, pp. 269–309. John Benjamins.

Schlenker, P. (2011). Indexicality and *De Se* reports. In K. V. Heusinger, C. Maienborn, and P. Portner (Eds.), *Semantics: an international handbook of natural language meaning,* Volume 2, Chapter 61, pp. 1561–1604. Mouton de Gruyter.

Schwager, M. (2010). On what has been said in Tagalog: Reportative *daw*. In T. Peterson and U. Sauerland (Eds.), *Evidence from Evidentials*, pp. 221–246.

Searle, J. R. (1969). *Speech Acts*. Cambridge University Press.

Searle, J. R. (1989). How performatives work. *Linguistics and Philosophy 12*(5), 535–558.

Şener, N. (2011). *Semantics and Pragmatics of Evidentials in Turkish*. Ph. D. thesis, UConn, Storrs.

Şener, N. and S. Şener (2011). Null subjects and indexicality in Tukish and Uyghur. In *Proceedings of WAFL 7*.

Shklovsky, K. and Y. Sudo (2014). The syntax of monsters. *Linguistic Inquiry 45*(3), 381–402.

Simeonova, V. and G. Zareikar (2015). The syntax of evidentials in Azeri, Bulgarian and Persian. In S. Vinerte (Ed.), *Proceedings of the annual meeting of the Canadian Linguistic Association*.

Simons, M. (2007). Observations on embedding verbs, evidentiality, and presupposition. *Lingua 117*(6), 1034–1056.

Simons, M., D. Beaver, C. Roberts, and J. Tonhauser (2017). The best question: Explaining the projection behavior of factives. *Discourse processes 54*(3), 187–206.

Slobin, D. and A. Akşu (1982). Tense, aspect, and modality in the use of the Turkish evidentials. In P. Hopper (Ed.), *Tense-Aspect: Between Semantics and Pragmatics*, pp. 185–200. Benjamins.

Smirnova, A. (2012). Evidentiality in Bulgarian: Temporality, epistemic modality, and information source. *Journal of Semantics 30*, 479–532.

Snider, T. (2017). *Anaphoric Reference to Propositions*. Ph. D. thesis, Cornell University.

Speas, M. (2004). Evidentiality, logophoricity and the syntactic representation of pragmatic features. *Lingua 114*(3), 255–276.

Speas, M. (2010). Evidentials as generalized functional heads. In A. M. DiSciullo and V. Hill (Eds.), *Edges, heads and projections: interface properties*, pp. 127–150. John Benjamins.

Speas, M. and C. Tenny (2003). Configurational properties of point of view roles. In A. M. DiSciullo (Ed.), *Asymmetry in Grammar,* pp. 315–343. John Benjamins.

Stalnaker, R. C. (1978). Assertion. In P. Cole (Ed.), *Syntax and Semantics 9: Pragmatics*, pp. 315–332. New York: Academic Press.

Stephenson, T. (2007a). Judge dependence, epistemic modals, and predicates of personal taste. *Linguistics and Philosophy 30*(4), 487–525.

Stephenson, T. (2007b). *Towards a Theory of Subjective Meaning*. Ph. D. thesis, Massachusetts Institute of Technology.

Stephenson, T. (2010). Control in centered worlds. *Journal of Semantics 27*(4), 409–436.

Sæbø, K. J. (2009). Judgment ascriptions. *Linguistics and Philosophy 32*(4), 327–352.

Sundaresan, S. (2018a). An alternative model of indexical shift: Variation and selection without context-overwriting. Ms., Leipzig University.

Sundaresan, S. (2018b). Perspective is syntactic: Evidence from anaphora. *Glossa: A Journal of General Linguistics 3*(1).

Sundaresan, S. and H. Pearson (2014). Formalizing linguistic perspective: insights from spatial anaphora. Ms., University of Leipzig and ZAS.

Szabolcsi, A. (1982). Model theoretic semantics of performatives. In F. Kiefer (Ed.), *Hungarian General Linguistics*. Amsterdam: John Benjamins.

Tenny, C. (2006). Evidentiality, experiencers and the syntax of sentience in Japanese. *Journal of East Asian Linguistics 15*, 245–288.

Thomas, G. (2014). Embedded imperatives in Mbyá. In H.-L. Huang, E. Poole, and A. Rysling (Eds.), *43rd Annual Meeting of the North East Linguistic Society (NELS)*, pp. 181–194. CreateSpace.

Tonhauser, J. (2012). Diagnosing (not-)at-issue content. In *Proceedings of* SULA 6, Umass, Amherst, pp. 239–254. GLSA.

Tonhauser, J., D. Beaver, C. Roberts, and M. Simons (2013). Towards a taxonomy of projective content. *Language 89*(1), 66–109.

Uegaki, W. (2015). *Interpreting Questions under Attitudes*. Ph. D. thesis, MIT.

Umbach, C. (2016). Evaluative propositions and subjective judgments. In C. Meier and J. van Wijnbergen-Huitink (Eds.), *Subjective Meaning: Alternatives to Relativism*, pp. 127–168. De Gruyter.

Vardomskaya, T. (2018). *Sources of Subjectivity*. Ph. D. thesis, University of Chicago.

de Vignemont, F. (2015). Bodily awareness. In E. N. Zalta (Ed.), *The Stanford Encyclopedia of Philosophy* (Winter 2015 ed.).

Wachowicz, K. (1974). Against the universality of a single wh-question movement. *Foundatons of language 11*(2), 155–166.

Weatherson, B. and A. Egan (2011). Introduction: Epistemic modals and epistemic modality. In A. Egan and B. Weatherson (Eds.), *Epistemic Modality*, pp. 1–18. Oxford University Press.

Willett, T. (1988). A cross-linguistic survey of the grammaticization of evidentiality. *Studies in Language 12*(1), 51–97.

Winans, L. (2016). *Inferences of* will. Ph. D. thesis, UCLA.

Woods, R. (2014). The syntax of orientation shifting: Evidence from English high adverbs. In *Proceedings of ConSOLE XXII*, pp. 205–230.

Wright, C. (1998). Self-knowledge: The Wittgensteinian legacy. In C. Wright, B. Smith, and C. MacDonald (Eds.), *Knowing Our Own Minds*, pp. 13–46. Oxford: Oxford University Press.

Yalcin, S. (2007). Epistemic modals. *Mind 116*(464), 983–1026.

Yanovich, I. (2013). Standard contextualism strikes back. *Journal of Semantics 31*(1), 67–114.

Yanovich, I. (Forth.). Epistemic modality. In L. Matthewson, C. Meier, H. Rullman, and T. E. Zimmerman (Eds.), *Blackwell Companion to Semantics*. Wiley.

Zeijlstra, H. (2007). Modal concord. In T. Friedman and M. Gibson (Eds.), *Proceedings of SALT 17*, Ithaca, NY, pp. 317–332. Cornell University.

Zimmerman, M. (2004a). Discourse particles in the left periphery. In W. F. B. Shaer and C. Maienborn (Eds.), *ZAS Papers in Linguistics (ZASPiL)*, Number 35, pp. 543–566.

Zimmerman, M. (2004b). Zum *Wohl*: Diskurspartikeln als Satztypmodifikatoren. *Linguistische Berichte 199*, 1–35.

Zu, V. (2015). A two-tiered theory of the discourse. In *Proceedings of the Poster Session of the 33rd West Coast Conference on Formal Linguistics*, pp. 151–160.

Zu, V. (2018). *Discourse Participants and the Structural Representation of the Context*. Ph. D. thesis, New York University.

Appendix A: Subjectivity questionnaire

Appendix B: Data

Appendix C: More on evidentials-in-questions

Appendix D: More on evidentials-in-attitudes

In addition to the shifted interpretation discussed in Section 4, evidentials in attitude reports may have other readings. First, embedded evidentials may be used to merely reinforce the meaning of the matrix verb, as illustrated in (84):

(84) German

Anna erzählte, dass Bernhard seinen Scheck zurückgeschickt haben
Anna say.PST COMP Bernhard his.ACC check send.back.PRT have.INF
soll.
REP.3SG.PRES
'Anna said that Bernhard sent back his check.' (Schenner 2010b:212)

The reading as in (84) is also attested in Georgian (Boeder 2000), Tagalog (Schwager 2010) and St'át'imcets (Matthewson et al. 2007), and is not restricted to a particular evidence type. For example, St'át'imcets inferential *k'a* may appear under 'believe' without indicating that the attitude holder has indirect evidence for the claim. As noted in the literature, this reading is in fact expected. It is reminiscent of modal concord (vacuous interpretation of one of the two co-occurring modals) and is likely to be derived via the same general mechanism; see (Portner 1997; Zeijlstra 2007; Anand and Brasoveanu 2010; Huitink 2012) for discussion.

Second, hearsay evidentials allow an interpretation that I will call *global*, following Schenner (2010b) and Schwager (2010). It is illustrated in (85):

(85) 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.me.AOR [COMP monk-PL-DAT Bible.NOM Georgian-ADV
gadautargmniat]
translate.3PL.S.3SG.O.**EV.PST**]
'Maria told me that, *as I have heard*, the monks translated the Bible into Georgian.' (adapted from Korotkova 2015:344)

The reading in (85) has been also reported for Bulgarian (Sauerland and Schenner 2007; Koev 2017), German (Schenner 2010b), Tagalog (Schwager 2010) and Turkish (Şener 2011), and it has been taken as an instance of speaker's perspective (Sauerland and Schenner 2007; Şener 2011; Korotkova 2015; Koev 2017).

Acknowledging that detailed research on this issue is left for the future, I want to make the following point. Global readings are only attested for hearsay evidentials, or for hearsay interpretations of evidentials that otherwise can have inferential readings, such as Georgian evidential past from (85). This fits well with what we know about hearsay in general. Across languages, some hearsay markers can have quotative uses, in addition to their regular evidential uses (signaling that the origo has linguistic information for the scope proposition). For example, quotative evidentials can make speech acts by proxy: they relay a question or an imperative made by a third party (Thomas 2014; Korotkova 2017; AnderBois 2018). It seems that the reading in (85)

may be similar, and that the hearsay marker is anaphoric to a previous speech act. Just like with quotative uses, it may be the case that the global readings constitute a result of an ambiguity between a true evidential meaning and a quotative one. For one thing, the grammar has other mechanisms for expressing those same readings: relayed speech acts can be conveyed by quotative particles (Korotkova 2017), and global readings look akin to the German reportative subjunctive (Schlenker 2003; Fabricius-Hansen and Sæbø 2004; Eckardt 2014). To this end, global uses of hearsay evidentials should be investigated in a larger context of reported speech strategies (see, for example, Bary and Maier 2018 for an overview). Of importance here is that such readings are not necessarily an instance of the origo non-shift, contra what has been claimed in the previous literature.

Summing up, embedded evidentials sometimes allow concord readings and global readings. The former are not surprising in light of what we know about the co-occurrence of intensional operators. The latter are more intriguing, but only occur with hearsay evidentials and seem to be related to speech reports more generally. I do not aim to account for either in this paper, but crucially, the existence of such readings does not refute my central claim that embedded evidentials shift to the attitude holder construed *de se*. Needless to say, the landscape of evidentials-in-attitudes is largely understudied. For example, it is not clear whether all evidentials allow concord readings even though they have only been reported for some, or whether all hearsay markers can have global readings. I leave it for future research.