The Landscape of Speech Reporting*

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Abstract Languages offer various ways to report what someone said. There is now a vast but heterogeneous literature on speech report constructions scattered throughout the semantics literature. We offer a bird's eye view of the entire landscape of reporting and propose a classification along two dimensions: at-issue vs. not-at-issue, and eventive vs. non-eventive. This bird's eye perspective leads to genuinely new insights, for instance on the nature of quotative evidentials and reportative moods, viz., that they are both eventive, and hence semantically more like some types of direct and indirect speech than reportative evidentials and modals are.

keywords: reported speech, evidentiality, events, not-at-issue content

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1 Introduction

We often refer to what other people have said. And we do so for a variety of different reasons, and using a variety of different linguistic structures. This ranges from the use of free indirect discourse or direct quotation to vividly represent entire (fictional) dialogues, word for word, to the use of evidential modals or moods to hedge one's commitment to a proposition by indicating that that proposition is based on hearsay evidence.[1]

(1) a. Mary looked up and then turned to John. "Watch out," she whispered, "here they come…" [direct discourse]
b. Someone was yelling at me. What the hell did I think I was doing! [free indirect discourse]

1 Unattributed examples are our own. Dutch examples represent our native judgments, German and English are usually adaptations of googled examples, checked with a native speaker. Gitksan original data are based on Bary's fieldwork.

c. She told him that he was being paranoid. [indirect discourse]

d. sin-hun=gat John ky'oots
hunt-fish=REP *John yesterday*
'John went fishing yesterday, I'm told.'
[reportative evidential, Gitksan, Peterson 2010]

e. Marie schijnt zwanger te zijn.
Marie seems pregnant to be.
'Mary is ill, I hear.' [reportative modal, Dutch][2]

f. Sie sagte sie habe keine Zeit. Sie müsse noch 86
She said she have-SUBJ *no time. She must*-SUBJ *still 86*
Prüfungen bewerten.
exams grade
'She said she has no time. She still has 86 exams to grade, she said'
[reportative subjunctive, German]

g. According to Theresa May, any extension of Article 50 will have to be a short, one-time-only deal.

The speech reporting strategies exemplified in (1) have all received significant amounts of attention, but from different, partly overlapping corners of semantics. Although there are partial attempts at unification among these and other linguistic phenomena – e.g. analyzing free indirect discourse as direct or indirect discourse, and those in turn as attitude reports or demonstration, or analyzing German reportative moods and/or modals as reportative evidentials, and those in turn as conventional implicatures – there is little attention to the general overarching category of speech reporting.[3]

In this paper we propose to zoom out and survey the entire landscape of speech reporting. Our first aim is to bring some order to the scattered body of data and theories about these various reporting strategies. We do this by proposing a classification of reports along two dimensions: at-issue vs. not-at-issue and eventive vs. non-eventive. Put in typological terms (e.g. Haspelmath 2010, Croft et al. 2017), we use eventivity and at-issueness as the two fundamental semantic comparative concepts and try to classify different strategies of speech reporting in terms of these concepts.

The distinction between at-issue and not-at-issue speech reports has already featured prominently in the (evidentiality) literature. It concerns the distinction between reports where the fact that something is said is at-issue versus reports where

2 To avoid confusion, in contrast to English *seem*, Dutch *schijnen* plus infinitive is limited to reportative uses.

3 For a recent plea for the emancipation of reported speech as a genuine linguistic category, see Spronck & Nikitina 2019.

not the reportative component but the content of what was said is at-issue. Our second distinction has received much less attention, but is, as we will see, just as important to understand the differences between the various speech reporting options natural languages offer, and the ways these are used in communication. Only some types of reporting introduce a speech event into the discourse record, presupposing a particular conversation. Only these eventive reports can be used to describe certain specific details about the speech event itself – e.g. focusing on the actual words, the manner of speaking, or the content expressed. It is this aspect that makes eventive reports especially useful for vivid characterizations of dialogues between characters in a story. By recognizing (and modeling) that the reporting strategies that have received most attention (indirect discourse and reportative evidentials) differ not just in at-issueness but also in this second, independent dimension, eventivity, it becomes clear that there is room for other combinations of these values, such as not-at-issue eventive reports (where we'll classify quotative evidentials and reportative moods).

In section 2 we propose a number of linguistic tests that we use to tease apart the four different combinations (from at-issue eventive to not-at-issue non-eventive). Here too, distinguishing both dimensions (rather than just at-issueness) brings clarity as to how certain tests that have already been around in the literature relate to each other (and to some new tests). We discuss examples of report strategies exemplifying each combination of values. For instance, direct quotation, as in (1a), is at-issue eventive because, among other things, a quotation describes a specific speech event, and the existence of that speech event can be directly challenged by other participants. On the other end of the spectrum we'll classify, for instance, reportative modals, like Dutch *schijnen* in (1e), as not-at-issue non-eventive, because they do not introduce or presuppose a specific speech act, and their reportative meaning component, e.g. that the speaker was told Marie was pregnant in (1e), has the status of a not-at-issue supplement in that it doesn't need to address the Question Under Discussion (QUD). Between these two extremes we classify for instance German and Ancient Greek reportative moods as not-at-issue eventive. The final cell, that of at-issue non-eventive speech reports, is less densely populated. We discuss why that might be and discuss English *according to* as a potential inhabitant. In sum, the various report phenomena exemplified in (1) inhabit the following four corners of the landscape of speech reporting:[4]

4 This is just a preliminary sketch. For instance, we'll see in 6.2 that indirect discourse has both at-issue and not-at-issue uses.

(2)

	eventive	not-eventive
at-issue	direct discourse (1a), free indirect discourse (1b), (canonical) indirect discourse (1c)	*according to* (1g)
not-at-issue	reportative moods (1f)	reportative evidentials (1d), reportative modals (1e)

Our primary aim in this paper is not to introduce a completely new semantic analysis of, say, Gitksan evidential marking, nor to provide new data on, say, Dutch parenthetical indirect discourse, nor to formulate a new linguistic test for not-at-issueness – although we *do* bring up new data here and there, and we *do* offer some novel modifications and syntheses of semantic theories and tests – but to survey the entire landscape of speech reporting, bringing together previously isolated areas of interest in semantics, investigating what they share, and how exactly they differ. This bird's eye perspective does lead to genuinely new insights, for instance on the nature of reportative moods, which share not-at-issueness with evidentials, but are crucially different from genuine reportative evidentials in being eventive, like direct and indirect discourse.

2 A typology of speech reports

In this section we introduce a number of diagnostics for at-issueness and for eventivity. In 2.1 we discuss three tests to tease apart at-issue vs. not-at-issue report constructions, i.e., report constructions where the information that someone said something is at-issue vs. not-at-issue. In 2.2 we discuss ways to tease apart eventive and non-eventive reports. As we will see there, we can't always cleanly separate the two dimensions. We'll propose two tests that diagnose the at-issue eventive combination. The only pure diagnostic for eventivity we found is more a heuristic, relying on preferences and/or distributional patterns. Nonetheless, our test battery will allow us to diagnose various reportative constructions according to our proposed four-part typology.

2.1 At-issue vs. not-at-issue

Information conveyed by natural language utterances is structured in certain ways. Not every bit of linguistic information is presented equally. Some information is more directly relevant to the communication at hand, other information is merely supplementary to that, and language has a variety of tools to mark such distinctions.

There are broadly speaking two schools of thought on the nature of the at-issue vs. not-at-issue distinction. The lexical/conventional approach builds the distinction right into to the semantics of certain lexical items or constructions (Potts 2005, Murray 2010, 2017). The pragmatic approach on the other hand tries to derive it from the global structure of the surrounding discourse (Simons et al. 2010). For the purposes of this paper, we adopt a mostly lexicalist interpretation of not-at-issueness: some constructions conventionally mark some of their content as not-at-issue. This is not to say that all not-at-issueness is to be lexically or grammatically implemented. In section 6 we'll briefly touch on pragmatic sources of not-at-issueness at work in speech reports in discourse. Nonetheless, we do maintain the following dependency between the two notions of at-issueness: content lexically/grammatically marked as not-at-issue cannot be pragmatically used as at-issue in the discourse-driven sense. This principle will be relevant for the semantic implementation in section 3, but also for our discussion of certain tests in this section.

Diagnostics for establishing that something is at-issue typically involve projection, question-answering and challengeability (see Tonhauser 2012, Murray 2010, 2017, among others). The last two are both based on the distinctive behavior of not-at-issue content in dialogue. Question-answering is 'backward looking' in this respect (it looks at what could have been the preceding question that the given report gives an answer to), whereas challengeability is 'forward looking' (it looks at what are potential moves to follow a given report) (Koev 2018).

To start with interpretation under embedding, we can say that expressions that are syntactically embeddable and that in such environments are also interpreted 'in situ' are at-issue (going back to ideas in Potts 2005; cf. Tonhauser et al. 2013, Beaver et al. 2017 on Obligatory Local Effect). Consider the contrast in (3):

(3) a. Als Piet volgens Jan ziek is, dan is hij ziek.
If Piet according to Jan ill is then is he ill
'If Piet is ill according to Jan then he is ill'

b. #Als Piet ziek schijnt te zijn, dan is hij ziek.
If Piet ill seems to be, then is he ill.
'If Piet is reportedly ill, then he is ill.'

An utterance of (3a) may be perfectly felicitous. It only has a reading where *volgens Jan* 'according to Jan' is interpreted in situ, that is in the antecedent of the conditional ($\approx$ 'if Jan said that Piet is ill, then he is ill'). By contrast, (3b) does not allow such an in situ reading of the reportative modal *schijnen* (i.e., something like 'if someone said that Piet is ill, then he is ill').

Three caveats are in order here. First, note that we're not claiming that the absence of in situ interpretation entails that the reportative information is not-at-issue. Other factors may be at play to exclude syntactic embedding (e.g. morphosyntactic reasons

for evidentials in Cheyenne, Murray 2010: 66). Our claim is only the other way around: what is interpreted under the scope of operators is at-issue. Thus, as for (3) we can say that the reportative contribution of *volgens Jan* ('according to Jan') is at-issue. If it is embeddeable but not interpreted in situ, the reportative meaning component is not-at-issue. But if it is not-embeddable the test is inconclusive since this may be for morphosyntactic or other reasons. In (3b), the source of infelicity is not clear. It doesn't 'sound ungrammatical' to us, but when reflecting about the meaning it just doesn't seem to have any sensible reading (hence '#' rather than '*').

Second, in those occurrences where the reportative content is interpreted in situ, it is at-issue. But this does not necessarily mean that it is grammatically/lexically marked as at-issue. In fact, as we will see in section 6, following Simons et al. (2010), everything can be pragmatically made not-at-issue in the right context, so, as we said above, at-issueness can never really be enforced grammatically.

Third, we'll exclude overt speech reports from the class of possible embedding environments for diagnosing at-issueness. Semantic research has shown over and over again that speech reports are special as embedding contexts in that they allow for embedded occurrences and interpretations of more elements than other contexts (e.g. attitudinal particles (Döring 2013), appositives (Amaral et al. 2007), indexicals (Schlenker 2003), long-distance reflexives (Solberg 2017)).[5] This makes that, although the interpretation of reportative markers in full speech reports is a very interesting topic (see e.g. Korotkova 2013, Schwager 2010, and also our Anaphoricity Heuristic below), it cannot be used to tease apart at-issue and not-at-issue contributions. For this reason we'll stick with embedding in conditional antecedents for this test.

To summarize:

> **In Situ Interpretation Test**: if a reporting construction is syntactically embeddable in the antecedent of a conditional and there interpreted in situ, the reportative meaning component it introduces is at-issue. If it is syntactically embeddedable but not interpreted in situ, the reportative meaning component is not-at-issue.

Simons (2007) uses question-answering to bring out the 'main point status' of the reported proposition in some report constructions. The idea behind this diagnostic is that in a felicitous discourse the Question under Discussion (QUD) must be addressed by a subsequent discourse move, but the answer cannot be provided by a proposition that is lexically or grammatically marked as not-at-issue (Simons et al. 2010). In other words, B's answer in (4) is felicitous because its main clause, the at-issue contribution, that Mary is ill, gives a partial answer to the question why

5 See also Krifka (2014) for an account of the special status of speech reports as embedding environments, and Korotkova (2013) for an application of these ideas to the case of evidentials.

Mary and Sue aren't here. Answer B' is infelicitous because the information that would answer the question is conveyed by an appositive relative clause, while the main clause content doesn't answer the question (see also e.g. AnderBois et al. 2010.)

(4) A: Why are Mary and Sue not here?
B: Mary, who likes to come to these meetings, is ill.
B': #Mary, who is ill, likes to come to these meetings.

Following ideas in Koev (2012), Murray (2017), and Snider (2018) among others, we turn this reasoning into a test to establish whether a component is conventionally marked as not-at-issue. Specifically, we determine the (not-)at-issueness of the reportative proposition by looking at a context where speaker A asks B explicitly about her evidence, thereby making this the QUD. In such contexts the answer in (5B) is infelicitous, even though it entails that someone said that Mary is ill, which would in principle answer the QUD. We take this to show that the reportative component is necessarily not-at-issue. By contrast, the answer in (5B') is felicitous, showing that here the reportative component is at-issue.

(5) A: What makes you think that Mary is ill?
B. #Ze schijnt griep te hebben.
she seems flu to have
'She has the flu, reportedly' [Dutch]
B'. John said/told me that Mary has the flu.

The question in (5) probes for at-issue speech reports, irrespective of whether they are eventive or not. In the literature other questions have been used as well to test at-issueness in a backward looking way (that is, by looking at the kind of questions a construction can answer, or, more generally, by looking at the kind of moves it can follow). In 2.2 we argue that some of these questions ask for answers whose reportative component is both at-issue and eventive and thus do not test for at-issueness per se.

In sum:

What Makes You Think Test: if a sentence of the form '[reportative expression] + *p*' is always infelicitous in answering a question of the form *What makes you think that p?*, the reportative meaning component is lexically/grammatically marked as not-at-issue. Otherwise, it is not lexically/grammatically marked as not-at-issue.[6]

6 Note that the 'always' is there to make sure that we don't classify the reportative meaning component as not-at-issue on the basis of infelicitous question-answer pairs where the reason for the infelicity is

Challengeability gives us the same picture but is forward-looking rather than backward-looking: it looks at what are potential next moves, more specifically whether or not the reportative component can be challenged by another discourse participant.[7]In direct and indirect discourse this component is easily challenged. In fact, when responding to a canonical report we can in principle challenge either that such a saying event took place, as in B, or we can challenge the embedded proposition, B':

(6) A: She said {"I'm innocent"/ that she was innocent}
B: Nonsense, she may be innocent, but she would never say that.
B': Nonsense, she's guilty, regardless of what she told you.

By contrast, for reportative evidentials a denial targeting only the reportative proposition is impossible, or at least much more difficult.[8] This is illustrated for the Gitksan reportative *gat* in (7).[9]

(7) A: sin-hun=gat John ky'oots
hunt-fish=REP *John yesterday*
'John went fishing yesterday, I'm told.'

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actually that the reported content does not provide a (partial) answer to the QUD in terms of content.

7 This test is a pretty standard diagnostic for at-issueness, but has recently been criticized by Korotkova (2016) and Snider (2018). Korotkova (2016) suggests that the infelicity of denying the reportative component of an evidential report is the result of the subjectivity of the evidence, rather than its not-at-issueness – you cannot usually deny that I heard something, just like you cannot deny that I'm in pain, simply because I tend to be in a much better position to judge such subjective facts about my own mental states. Snider (2018) notes on the basis of an observation already made in Hunter & Asher (2016) that some occurrences of reporting strategies that have a not-at-issue reporting component on the basis of a backward looking test would come out as at-issue on the challengeability test. While he concludes on the basis of this observation that challengeability does not probe for at-issueness, the criticism does not apply to Hunter and Asher's account who use a different definition of at-issueness. The observation leads Hunter and Asher to conclude that we shouldn't work with strictly separated dimensions for at-issue and not-at-issue information (see section 3.2). Although the different choices that can be made in the discussions about the challengeability test are relevant for the ultimate account (not provided in this paper), for concreteness we do include it as one of the tests for at-issueness in this paper.

8 In a discourse, more explicitly targeted challenges can always be communicated ("What you say is based on the assumption that you have hearsay evidence, and although I agree that Mary is ill, your assumption is incorrect"). In fact, different ways of challenging may lead to different results. We leave this for future work.

9 The consultants were first asked to translate the individual English sentences into Gitksan and were then given the dialogues in (7) and asked whether these were ok. As for B', where the evidential proposition is targeted, a consultant remarked "It's fine but you're just contradicting yourself." Abbreviations (also for (47)): COMP = complementizer, DM = determinate marker, DUR = durative, FOC = focus, NEG = negation, PN = proper noun connective, REP = reportative.

B: nee=dii hogyax̲-t. nee=dii sin-hun=t ky'oots.
NEG=FOC *correct*-3.II NEG=FOC *hunt-fish*=DM *yesterday*
'That's not true. He didn't go fishing yesterday.'
B': #nee=dii hogyax̲-t. gya'a-n win sin-hun=s John ky'oots.
NEG=FOC *correct*-3.II *see.*2SG.II COMP *hunt-fish*=PN *John yesterday*

'That's not true. You saw John fishing yesterday.'[10]

Challengeability Test: if the reportative component of a sentence cannot straightforwardly be challenged without thereby also challenging the reported content, the reportative component is not-at-issue. Otherwise it is at-issue.

2.2 Eventive vs. non-eventive

Eventivity is characterized by reference to a speech event. We can linguistically probe for the presence of a speech event in the semantics by trying to manipulate it. A first way to do this is by modification.

(8) a. Two days ago Juan whispered to Toshi, in his deep voice, that it was over.
b. Two days ago Juan whispered to Toshi in his deep voice "It's over".

Dutch *schijnen* and the reportative modal *zou* do not allow such modification:

(9) a. #De relatie schijnt met zware stem voorbij te zijn.
the relationship seems with deep voice over to be
'The relationship was over, reportedly with a deep voice.' [Dutch]
b. Jan zou gisteren ziek zijn geweest.
Jan would yesterday ill have been
'Jan was reportedly ill yesterday.' [Dutch]

Although the sentence in (9b) does entail that someone said something, what is located yesterday in (9b) is not a speech event but the (alleged) illness. For (9a) the lack of modifable speech event results in infelicity due to the fact that *in a deep voice* cannot plausibly be taken to modify the state of a relation being over.

Note that this test only goes one way: if we can modify the manner of speaking, or specify a concrete time and place, we must be dealing with an eventive report.

10 Note that only when a challenging formula is used that does not explicitly refer to a speech event (as in (7)) can the infelicity be taken as a diagnostics for not-at-issueness. Otherwise the infelicity could in principle be due to non-eventivity as well.

But if we can't, that doesn't necessarily mean we're dealing with a non-eventive construction. Independently of eventivity, not-at-issue content is also generally considered immune to modification.

Modification Test: if we can modify the manner of speaking, or specify a concrete time and place for the reported speech act, we are dealing with an eventive speech report. Otherwise, the report may be non-eventive or not-at-issue.

Next, note that only at-issue eventive speech reports can be used in answer to questions that focus on or ask for a speech act, such as *Did anyone dare say anything?* and *What happened next?*. By asking for a (speech) event and letting the answer be the report of a state we can separate at-issue eventive speech reports (yielding felicitous question-answer pairs) from other kinds of speech reports (yielding infelicitous question-answer pairs).

(10) A: Did anyone dare say anything? / What happened next?
B: John said, "It's over".
B: #Allegedly, it was over.

As with the Modification Test, infelicity in the What Happened Next Test can in principle be caused by non-eventivity or by the speech event being not-at-issue. Compare this to the What Makes You Think Test described in the previous section: While both tests are backward looking in that they consider what questions a certain construction can answer, the What Makes You Think Test can be used to diagnose reportative at-issueness generally, while the What Happened Next Test only diagnoses eventive at-issueness.

What Happened Next Test: if a sentence with a reportative expression is felicitous in answering a question of the form *What happened next?*, the reportative component is at-issue eventive. Otherwise it is either non-eventive or not-at-issue.

The tests discussed so far divide the total landscape of speech reports into three classes: at-issue eventives, at-issue non-eventives, and not-at-issue reports. Within the not-at-issue class, however, there are also reasons to distinguish between eventives and non-eventives, as we can see when we consider their natural environments.

Let's consider the optative mood in Ancient Greek. This mood usually occurs in complement clauses after verbs of saying. In grammars it is indeed described under the heading of indirect discourse, as a special mood occurring therein (e.g. Smyth (1916: sections 1570–1603), van Emde Boas et al. (2019: section 41)).

(11) enthauta Hudernês … eireto Epialtês hokodapos
then *Hydarnes.*NOM *ask.*PST *Epialtes.*ACC *of-what-country.*NOM
eiê ho stratos.
*was.*OPT *the.*NOM *army.*NOM
'Then Hydarnes … asked Epialtes what country the army was from.'
[Ancient Greek, Hdt. 7.218.2]

The more elaborate grammars go on to note that the optative also has reportative uses in continuations of indirect discourse, as in (12) (this is still only the beginning, the report continues for a couple of sentences), where the optative-marked verbs are underlined in the translation:

(12) Meta tauta edidoto legein tôi boulomenôi; kai
after *that* *give.*PST.PASS.3SG *say.*INF *the.*DAT.SG *want.*PTCP.DAT *and*
elegon polloi kata tauta hoti pantos
*say.*PST.IMP.3PL *many.*NOM.PL PREP *same.*ACC COMP *all.*GEN
axia legoi Seuthês; kheimôn gar eiê
*worth.*ACC.PL *say.*OPT.3SG *Seuthes.*NOM *winter.*NOM *for* *be.*OPT.3SG
kai oute oikade apoplein tôi touto boulomenôi
and *nor* *home* *sail.*INF *the.*DAT.SG *that.*ACC.SG *want.*PTCP.DAT.SG
dunaton eiê, diagenesthai te en filiai oukh
*possible.*NOM.SG *be.*OPT.3SG *live.*INF *and* *in* *friendship.*DAT *not*
hoion te, ei deoi ônoumenous zen, …
possible *if* *had-to.*OPT *buy.*PTCP.ACC.PL *live.*INF
'After this the opportunity to speak was offered to any one who desired it; many **spoke** to the same effect, saying that Seuthes said things of supreme importance; for the season was winter, and it was not possible to sail back home, if that was what one wished, and impossible also to get along in a friendly country if they had to maintain themselves by purchasing …'
[Ancient Greek, X. An. 7.3.13]

As argued in Bary & Maier (2014) and more elaborately in Bary (2018), optatives in such continuations are not syntactically dependent on the verb of saying that introduces the speech report. The presence of the particle *gar* 'for' indicates that there a new main clause starts.

Out of the blue occurrences of the reportative use of the optative are very rare.[11] The fact that the most natural habitat of the Greek optative is the complement clause of an indirect speech report, in combination with the fact that, when not syntactically embedded, out of the blue occurrences are much rarer than occurrences where the

11 Only five examples are known, all from Herodotus, see Bary (2018), footnote 4.

reported content is interpreted as further specification of a speech event previously introduced, we take as characteristic of an eventive construction. In this, we follow Brasoveanu & Farkas (2007),who argue that we interpret a typical eventive report like (13) as referring back to a particular previously established conversation between Jessica and someone else, rather than as asserting simply that there was no speech event in which Jessica said that Sam had an appointment (too strong), or as asserting that there was at least one speech event in which Jessica did not say that Sam had an appointment (too weak).

(13) Jessica didn't say that Sam had an appointment with Ernie.

Note that allowing 'continued report' readings is not enough to qualify as an eventive speech report. Faller (2002) and Murray (2009) already give examples for Cuzco Quecha and Cheyenne respectively in which the content of a sentence with a reportative marker is to be interpreted as part of the content of a speech event referred to earlier. (14) is an example from Cheyenne:

(14) Éšee-va ná-éestsėstov-o-∅ Dale. É-hó'táheva-sėstse Annie.
day-OBL *1-speak.to.s.o.*-1:3-DIR *Dale* *3-win*-RPT.3SG *Annie*
'Yesterday I spoke to Dale. [He says that] Annie won.'
[Cheyenne, Murray 2009: 338]

The difference is that while for the Greek (eventive) ones such an anaphoric link is the rule (usually even in the form of occurrence within the complement clause of a verb of saying), the reportative markers in Cheyenne and Cuzco Quechua occur happily out of the blue, without picking up a particular speaker for example. We suggest that the interpretation of the sequence of two sentences in (14) is due to a more general and looser pragmatic requirement to establish discourse relations between utterances that succeed each other in a discourse.

Anaphoricity Heuristic: if a reportative expression tends to occur only in discourse contexts where the reported speech situation has already been explicitly introduced before, we may assume the report is eventive. If there is no such tendency, we may assume it's non-eventive.

3 A formal framework for representing events and not-at-issue content

Throughout the paper we'll make our proposal explicit by offering logical forms representing the compositional contributions of the relevant constructions. We'll rely on a traditional, two-stage setup, where natural language sentences are translated into formulas, which in turn can be interpreted in a model. The resulting interpretation can be used to update a context. For the formal language we use a standard higher-order,

intensional, typed lambda calculus, with indexicals. Basic types are e (entities), r (times), v (eventualities), s (possible worlds), and t (truth values). We'll use explicit quantification over individuals, eventualities, and times, but not possible worlds – for intensional constructions we use $^\wedge\varphi$, a term of type st to denote the possible worlds proposition expressed by φ.

We'll denote the translation of a natural language expression into formal metalanguage with $\rightsquigarrow$ or $\mathbb{T}$. For example, $\mathbb{T}(\text{happy}) = happy_{et}$. Subscripts indicate the type of an expression, but are typically omitted. Expressions in the formal language are model-theoretically interpreted relative to a context c (an agent–world–time triple), an index w (world–time pair), and an assignment function f: E.g. $[\![happy(i)]\!]^{c,f}_w = 1$ (i is a constant for the agent parameter of c) iff $[\![i]\!]^{c,f}_w \in [\![happy]\!]^{c,f}_w$ iff $agent(c) \in \{x \mid x \text{ is happy in } w\}$. From here on we'll ignore the assignment function f whenever there are no variables to interpret.

Note that $happy(i)$ is of type t and thus refers to a truth value when interpreted in a model, relative to a context and an index. Given this Montague/Kaplan framework we can now define the proposition expressed by an utterance of a sentence (a term of type t) in context c by abstracting over the index: $[\![happy(i)]\!]^c = \{w \in W \mid [\![happy(i)]\!]^c_w\}$.[12] To avoid confusion later on it may be worth stressing here that terms of type st by contrast *refer* to propositions, relative to a context and index: $[\![^\wedge happy(i)]\!]^c_w = \lambda w.\, [\![happy(i)]\!]^c_w$ (= the function that maps worlds where a_c is happy to 1 and other worlds to 0). Such st terms don't correspond to utterances or assertions as they are not 'truth-evaluable' (relative to context and index). Put differently, there is no such thing as the proposition expressed by an utterance of a type st term in a context c. Our analysis in section 5.3 and beyond will rely on this fundamental distinction between type t terms (corresponding to assertions) and type st terms (corresponding to sentential complements in intensional constructions).

3.1 Contentful events

In Neo-Davidsionian event semantics, clauses and adverbial modifiers alike express properties of events, which can be combined via the familiar Predicate Modification rule (Heim & Kratzer 1998):

(15) If $\mathbb{T}(\alpha) = \lambda x\varphi$ and $\mathbb{T}(\beta) = \lambda y\psi$ (and x doesn't occur free in ψ), then $\mathbb{T}([\alpha\ \beta]) = \lambda x[\varphi \wedge \psi[y/x]]$.

For example:

(16) a. $\mathbb{T}(\text{Jiaqi walks}) = \lambda e[walk(e) \wedge agent(e) = jiaqi]$

12 By further abstracting over the context we can define the Kaplanian character of a type t term as well.

b. $\mathbb{T}$(clumsily)=$\lambda e[clumsy(e)]$
c. $\mathbb{T}$(Jiaqi walks clumsily) = $\lambda e[walk(e) \wedge agent(e) = jiaqi \wedge clumsy(e)]$

In the Neo-Davidsonian paradigm the standard arguments of the verb (agent, theme, goal, etc) are introduced via (covert) thematic role operators (which we'll tend to leave out of our syntactic LF representations):

(17) a. $\mathbb{T}$(AGENT) =$\lambda x \lambda e[agent(e) = x]$
b. $\mathbb{T}$(walk)=$\lambda e[walk(e)]$
c. $\mathbb{T}$([AGENT Jiaqi] walks) = $\lambda e[walk(e) \wedge agent(e) = jiaqi]$

At the end of the compositional translation of a clause we will now usually end up with a property of events, as in (16) (and (17)). We then automatically apply Existential Closure to turn that event property into a truth-evaluable event quantification (of type t):

(18) (16) $\rightsquigarrow \exists e[walk(e) \wedge agent(e) = jiaqi \wedge clumsy(e)]$

For our purposes, an important application of event semantics involves the representation of attitude and speech reports. Kratzer (2006) argues against the traditional Hintikka-style approach to attitude verbs as intensional operators, in favor of an approach where the attitude verb introduces an eventuality and the complement serves as a modifier. Simplifying her approach, in line with subsequent applications (e.g. Brasoveanu & Farkas 2007, Hacquard 2010, Maier 2017), we'll assume that some eventualities (belief states, speech events, but not walking or touching events) themselves have propositional contents. We posit the operator CONTENT, relating an event and its propositional content:[13]

(19) $\mathbb{T}$(CONTENT) = $\lambda p_{st} \lambda e[content(e) = p]$

The syntactic LF of an attitude or speech report construction then looks like (20) (where we may think of the optional complementizer *that* as the overt realization of CONTENT):

(20) [AGENT Mary] thinks [CONTENT [I'm crazy]]

Translating this into the proper logical form is straightforward. Following Heim & Kratzer's (1998) Intensional Functional Application rule, the clause *I'm crazy*, of type t (21a), gets lifted to the propositional type st in order to fit the argument slot of CONTENT, yielding an event property (21b) that modifies the verb (21c) via Predicate Modification (21d). The rest is as before: the subject term is analyzed as

13 Cf. Hacquard 2010, Moulton 2009, Kratzer 2016 for more on contentful eventualities and the CP-as-modifier approach to attitude and speech reports.

another event property, further modifying the thought event, and finally we apply Existential Closure to get the actual truth conditions in (21e):

(21) a. $\mathbb{T}$(I'm crazy) = $crazy(i)$
b. $\mathbb{T}$(CONTENT [I'm crazy]) = $\lambda e[content(e) = {}^{\wedge}crazy(i)]$
c. $\mathbb{T}$(thinks) = $\lambda e[think(e)]$
d. $\mathbb{T}$(thinks [CONTENT [I'm crazy]]) = $\lambda e[say(e) \wedge content(e) = {}^{\wedge}crazy(i)]$
e. $\ldots \rightsquigarrow \exists e[think(e) \wedge agent(e) = mary \wedge content(e) = {}^{\wedge}crazy(i)]$

In words, the report expresses that Mary was the agent of some thought event that had as its content the proposition that I'm crazy. In the following sections we will adopt this general event-based approach to model various forms of direct and indirect speech reports, and later evidential moods.

3.2 At-issue vs. not-at-issue content

The distinction between at-issue and not-at-issue content is cashed out in terms of multiple meaning dimensions (Bach 1999, Potts 2005, Geurts & Maier 2013).[14]

(22) Mary, who likes to come to these meetings, is ill
$\approx \left\langle \begin{array}{c} \text{Mary is ill} \\ \text{Mary likes to come to these meetings} \end{array} \right\rangle$

Potts uses these two-dimensional forms to model the projection behavior of what he calls conventional implicatures, i.e. the supplemental content on the second dimension. The idea is that linguistic operators (negation, quantifiers, modals etc.) are semantically redefined in such a way as to only operate on the first dimension, leaving the second dimension unaffected. This familiar setup indeed semantically derives universal projection of any meaning components that are conventionally marked as not-at-issue.

The next step is to describe how these two meaning dimensions derived for a whole sentence interact with the surrounding discourse structure and the common ground when uttered in a specific discourse context. We want to follow a standard strategy for interpreting appositives and evidential meaning dimensions generally, viz. that they impose a non-negotiable, forced "pre-update" of the common ground (Murray 2009, Koev 2013, AnderBois et al. 2015, Griffiths 2015). Based on ideas from Farkas & Bruce (2009) and Inquisitive Semantics (Groenendijk & Roelofsen

14 Hunter & Asher (2016) argues for a less strict division (see also note 7). We expect that it will be possible (though not trivial) to recast some of the core ideas from this paper within their discourse-structural account.

2009), and going back to Stalnaker (2002), at-issue content is analyzed as an "update proposal" that addresses the question under discussion and can be accepted or rejected by other discourse participants. To make this formally precise we need a structured discourse model that distinguishes updates from proposals and further keeps track of questions under discussion.

Simplifying somewhat the familiar structured discourse model of Farkas & Bruce (2009) we take a discourse context to be a quadruple $\langle c, C, Q, P\rangle$, where c is a Kaplanian context (specifying the current speaker s_c and the time t_c and world w_c of her utterance), C is a set of worlds or indices (the context set, representing what is considered common ground), Q a stack of QUDs (formulas representing the open questions under discussion), and P a stack of proposals (formulas representing the update proposals currently being negotiated for inclusion in the common ground).[15] With Farkas and Bruce we assume some basic stack operations: $push(X, x)$ (push an element x on top of stack X) and $pop(X)$ (remove the top element from the stack), and we use $top(X)$ to refer to the top element of the stack.

In our discourse model, asking a question amounts to pushing (the logical form of) the question onto the QUD stack, (23a), and asserting amounts to pushing the logical form of the assertion onto the proposal stack, (23b). We assume that a discourse move of asserting is only allowed if it addresses the question at the top of the QUD stack (i.e. it contextually entails a full or partial answer to the top question, see e.g. Simons et al. 2010 for details).

(23) a. $\langle c, C, Q, P\rangle + \varphi? = \langle c, C, push(Q, \varphi?), P\rangle$
b. $\langle c, C, Q, P\rangle + \psi = \langle c, C, Q, push(P, \psi)\rangle$, if ψ addresses $top(Q)$, otherwise undefined.

Whenever the proposal stack is non-empty, the further discourse moves of accepting and rejecting become available.[16]

(24) a. $ACCEPT(\langle c, C, Q, P\rangle) = \langle c, C \cap [\![top(P)]\!]^c, pop(Q), pop(P)\rangle$[17]
b. $REJECT(\langle c, C, Q, P\rangle) = \langle c, C, Q, push(pop(P), \neg top(P))\rangle$

15 The Farkas and Bruce model keeps track of the proposals made by each of the participants separately (in the form of the individual, public discourse commitments taken on by each speaker). We simplify by just keeping track of what is being proposed.

16 By popping the question stack we are assuming that a question that has been addressed counts as answered and can be moved off the table. This is of course an oversimplification of the discourse dynamics of complex hierarchies of QUD's and partial answers proposed by various participants. See e.g. Roberts (2012)

17 Recall from our remarks about the Montague/Kaplan system in section 3 that if the current proposal $top(P)$ is of type t, $[\![top(P)]\!]^c$ is the possible worlds proposition (more precisely: a set of indices) expressed by an utterance of that proposal in context c.

Acceptance is a crucial move to meet the ultimate goal of cooperative conversation, as formulated by Stalnaker (1970): increase the amount of information in the interlocutors' common ground, i.e. reduce the context set. Note however that acceptance is only possible if the proposal stack is non-empty, which is in turn only possible if the QUD stack is non-empty. Rejection, as defined in (24b), does not affect the common ground, nor does it settle any QUD, it just means that we replace the top of the proposal stack with its negation. After a rejection, the discourse may develop into different directions: the negated proposal may be rejected as well, bringing us back to the previous state, or the interlocutors may agree to disagree and move on, or the first asserter may change their mind and allow the negated proposal to be accepted (or they may not change their mind, but accept it anyway, for the sake of conversation), or a new question may be raised. We don't want to go into the fine details of dialogue management here. We also don't have anything new to offer with regard to the question of how the abstract conversational moves of *ACCEPT* and *REJECT* are realized linguistically, or paralinguistically by speakers. We'll make the simplifying assumption that *ACCEPT* is a default move, i.e. if nobody objects at the end of a turn, *ACCEPT* is automatically applied.

Our main concern here is to use this general discourse framework to capture the interpretation of a 2D logical form. Implementing the not-at-issue-as-pre-update and at-issue-as-proposal ideas outlined above means updating the context set with the not-at-issue component, and adding the at-issue component on top of the stack of proposals.

(25) $\langle c, C, Q, P\rangle + \left\langle \begin{array}{c} \varphi \\ \psi \end{array} \right\rangle = \langle c, C \cap [\![\psi]\!]^c, Q, push(P, \varphi)\rangle$, if φ addresses $top(Q)$, otherwise undefined.

To illustrate our basic 2D semantics and pragmatics, let's apply it to the appositive example in (22), repeated in (26a) with 2D logical form in (26b).

(26) a. Mary, who likes to come to these meetings, is ill

b. $\left\langle \begin{array}{c} ill(mary) \\ like(mary, meetings) \end{array} \right\rangle$

Let's assume (26a) is uttered in a context $\langle c, C, Q, P\rangle$, where the top QUD in Q is the question why Mary is not at the meeting. Let's further assume that, in this context, this question would be fully answered by the proposition that Mary is ill (i.e. the proposition that Mary is ill is only compatible with one of the alternative propositions that make up the Hamblin-style interpretation of the question why she's not at the meeting). This means we can apply the update schema from (25) to derive the following update:

(27) $\langle c, C, Q, P\rangle + \left\langle \begin{array}{c} ill(mary) \\ like(mary, meetings) \end{array} \right\rangle$
$= \langle c, C \cap [\![like(mary, meetings)]\!]^c, Q, push(P, ill(mary))\rangle$

Since the proposition that Mary is ill is now the top update proposal, other participants may challenge it, with *REJECT*. If nobody challenges the proposal, or it's actively endorsed, as the asserter's turn ends we apply our default *ACCEPT* as defined in (24a), in order to achieve a further common ground update.

(28) $ACCEPT(\langle c, (C \cap [\![like(mary, meetings)]\!]^c), Q, push(P, ill(mary))\rangle)$
$= \langle c, C \cap [\![like(mary, meetings)]\!]^c \cap [\![ill(mary)]\!]^c, pop(Q), P\rangle$

The derivation captures the information-structural intuitions typically associated with appositives: the at-issue component, in this case the host clause contribution, has to address the top QUD; if it does, the not-at-issue component updates the common ground, and the at-issue component is up for discussion, only turning into an additional common ground update if unchallenged (or explicitly endorsed by the other participants).

This concludes our presentation of a general framework for representing contentful events and not-at-issueness. In the remainder of the paper we plan to apply this framework to capture the semantics of the four types of reports from our typology in such a way as to properly predict the various test behaviors identified in the previous section.

4 At-issue eventive reports: direct and indirect speech

In section 2 we proposed a number of tests to diagnose whether a linguistic report construction is eventive, and whether the report component is at-issue. On the basis of these tests, canonical direct, indirect, and free indirect discourse come out as at-issue eventive reports. In this section we propose a uniform neo-Davidsonian semantics for these report types and show that it captures both the eventivity and the at-issueness we observe in the tests.

4.1 A uniform semantics for direct and indirect speech

Our semantics of canonical report constructions starts from the idea, introduced in section 3.1, that speech report verbs, like attitude verbs, introduce events that can have a propositional content. One way in which speech reports differ from some attitude reports is in presupposing a specific conversation in which the asserted speech event took place. In section 2.2 we already mentioned some Greek data and Brasoveanu & Farkas's (2007) argument to this effect. We propose to build this into

the lexical semantics of saying verbs, by adding a free variable E intended to pick out a contextually supplied conversation (i.e. a sequence of speech events):

(29) $\mathbb{T}(\text{say}) = \lambda e \in E[say(e)]$

Another difference between speech and attitudes is that speech events not only have contents but also concrete linguistic forms. Following Maier (2017) we use this to provide a uniform semantics of direct and indirect speech reports: while an indirect speech report complement specifies the content of a speech event, a direct report specifies its form. The event-based approach has also proven particularly well-suited for modeling less canonical report types that we'd classify as eventive, such as free indirect discourse which has been argued to be some kind of mixture of form and content (Maier 2017).[18]

Working this out compositionally we need first of all a way to refer to a linguistic form (and/or demonstration, depending on your basic theory of quotation). In our formal language we introduce a new type u (à la Potts 2007) and use Quine hooks to indicate (pure) quotation in the formal type-theoretic metalanguage, i.e.:

(30) If σ is a string of letters (or signs, or phonemes), then $\ulcorner\sigma\urcorner$ is of type u and $[\![\ulcorner\sigma\urcorner]\!] = \sigma$.

Strings of letters are now part of our ontology. We assume that each natural language expression corresponds to such a string and that at any point in the semantic derivation we have access to that string. We then introduce an operator QUOT as the quotational analogue of CONTENT, i.e., relating an event and its form (given as an expression of type u).

(31) $\mathbb{T}(\text{QUOT}) = \lambda q_u \lambda e[form(e) = q]$

Using Sudo's (2013) quotational analogue of Intensional Function Application, we coerce the argument of QUOT into a type u object (i.e., in the formal metalanguage, we put its phonetic surface realization in Quine hooks $\ulcorner\ \urcorner$). The logical form and derivation for direct speech then looks rather like that of indirect speech in (21) above:

(32) Mary said, "You're crazy."

a. [AGENT Mary] said [QUOT [you're crazy]]

b. $\mathbb{T}(\text{QUOT [you're crazy]}) = \lambda e[form(e) = \ulcorner\text{you're crazy}\urcorner]$

18 Other examples are *be-like* quotatives and sign language role shift (Davidson 2015, Maier 2018), hear-reports in Turkish (Ozyildiz et al. 2018), and unembedded indirect speech constructions in Latin (Solberg 2017). In section 6 below we'll add parenthetical reports and quotative evidentials to this list.

c. $\mathbb{T}$(say [QUOT [you're crazy]]) =
$\lambda e \in E[say(e) \wedge form(e) = \ulcorner$you're crazy$\urcorner]$
d. $\ldots \rightsquigarrow \exists e \in E[say(e) \wedge agent(e) = mary \wedge form(e) = \ulcorner$You're crazy$\urcorner]$

In words: the direct speech report in (32) says that, within the contextually relevant conversation that Mary had, there was an event e, which was a saying event with Mary as agent, and with a phonological surface form approximated by the sequence of letters *You're crazy*.

4.2 Evaluating the event semantics for direct and indirect speech reports

Let's take a closer look at the various diagnostic tests and see how our semantics predicts the at-issue eventive behaviors of canonical direct and indirect speech reports.

4.2.1 Eventivity characteristics

In diagnosing eventivity, the first test we discussed involved modification of the speech event as a sign of eventivity. Direct and indirect speech reports clearly allow such modification, as shown in example (8), repeated below in (33).

(33) Two days ago Juan whispered to Toshi, in his deep voice, that it was over.

The current semantics correctly predicts this behavior. We analyze the speech verb as an event property which can be further modified through eventive Predicate Modification:

(34) a. $\mathbb{T}$([AGENT Juan] whispered [to Toshi]) =
$\lambda e \in E[whisper(e) \wedge agent(e) = juan \wedge goal(e) = toshi]$
b. $\mathbb{T}$(in his deep voice) = $\lambda e.deepvoice(e)$
c. $\mathbb{T}$(two days ago) = $\lambda e.2daysbefore(e,n)$
$\ldots \rightsquigarrow \lambda e \in E[whisper(e) \wedge agent(e) = juan \wedge goal(e) = toshi$
$\wedge\ deepvoice(e) \wedge 2daysbefore(e,n) \wedge content(e) = {}^{\wedge}over]$

Next is the What Happened Next Test. Our semantic analysis of canonical reports, combined with our general pragmatic account of structured context updates, correctly predicts that such reports should be felicitous as answers to questions like *What happened next?* or *Did anyone dare say anything?*.

(35) A. What happened next?
B. Sue told May that she's a genius.

On our discourse model, more specifically see definition (23), in interpreting this dialogue A's question gets pushed on top of the QUD stack. The report is treated here as a simple unidimensional assertion, which, still following (23), can be felicitously used to update a context quadruple if it addresses that top QUD. Since the occurrence of a certain speech event fully answers the question what happened, the dialogue is correctly predicted to be pragmatically felicitous.

Finally, note that our event-based semantics was explicitly designed to capture the anaphoricity of (in)direct discourse, following Brasoveanu & Farkas's (2007) observations about the presuppositional nature of indirect discourse, as discussed around (13) in section 2. More specifically, in our proposal the free variable E, restricting the event quantifier to range over speech events within a contextually given conversation, is compositionally introduced by the speech verb, and thereby ensures the observed anaphoric interpretations for all canonical reports.

4.2.2 At-issueness characteristics

In section 2.1 we likewise introduced three tests to detect at-issueness. We'll go through those now.

First, direct and indirect speech obey In Situ Interpretation. In (36), the existence of a saying event doesn't project, but is interpreted as the antecedent of the conditional:

(36) If Mary said {that I'm crazy/"You're crazy"}, then maybe I am crazy.

Our semantics predicts this lack of projection from clausal embedding, because the existential event quantification is introduced by Existential Closure, which is triggered at the level of the smallest clause containing the verb. We thus predict the following logical form:

(37) a. $(\exists e \in E[agent(e) = mary \wedge say(e) \wedge content(e) = {}^{\wedge}crazy(i)]) \rightarrow \Diamond crazy(i)$

Second, we've already observed in (5) that indirect speech can be used to answer a What Makes You Think question:

(38) A: What makes you think that Mary is ill?
B: John told me that she has the flu.

B's answer is perfectly felicitous, which means that it must address the top QUD, i.e. A's question. On our semantics, B's answer contributes a certain speech event (with the content that Mary has the flu), which is readily construed as a reason for B to think that Mary is ill, and hence directly addresses A's question. We thus correctly predict that the dialogue is felicitous.

Thirdly, we have seen in (6), repeated in (39), that (in)direct speechcomes out as at-issue in the Challengeability Test: we can deny just the existence of the speech act, without thereby denying the reported content.

(39) A. She said that she was innocent.
B. Nonsense, she may be innocent, but she would never say that.

This is as predicted by our event semantics and discourse model. With a simple, one-dimensional speech report, A proposes to make it common ground that some salient 'she' said something, i.e. the existence of such a speech act gets put on top of the current proposal stack, and can then be either accepted or rejected. B's 'Nonsense' indicates that this proposal is in fact being rejected, meaning it gets taken off the table, to be replaced by its negation.

5 Not-at-issue non-eventive reports: reportative evidentials

It is well known that some languages have dedicated morphemes to express the source of the information conveyed by an utterance. Thus, in Cuzco Quechua, if a speaker wants to say that it's raining they can choose to indicate that they know this because they saw it, inferred it, or heard it from someone else.

(40) a. Para-sha-n-mi.
RAIN-PROG-3-mi
'It is raining(, I see).'
b. Para-sha-n-chá.
RAIN-PROG-3-chá
'It is raining(, I guess).'
c. Para-sha-n-si.
RAIN-PROG-3-si
'It is raining(, I am told).' [Cuzco Quechua, Faller 2002: 3]

Our interest is in the last subtype, reportative or hearsay evidentiality, i.e. constructions that mark some content as based on hearsay evidence. In this section we propose a semantics that treats this type of evidential as a not-at-issue non-eventive speech reporting construction. This semantics extends beyond reportative evidential morphemes in the strict sense of Aikhenvald (2004) to include also uses of lexical and other non-functional markers with a reportative meaning component which according to our diagnostics fall in the same corner of the speech report landscape. This includes some English adverbials and Dutch and German modals.

(41) a. Supposedly, that's a really great book.

b. Maar de film moet ook heel goed zijn / schijnt ook heel goed te zijn.
but the movie must also very good be / seems also very good to be
'But the movie is also very good, reportedly.' [Dutch]

5.1 A 2D semantics for reportative evidentials and modals

Based on some of our at-issueness tests, we've already suggested in section 2 that the reportative component of constructions like in (40c) and (41) is conventionally marked as not-at-issue. The reported content on the other hand is at-issue.[19] Hence, the starting point of our semantic analysis is to put the reported content, often referred to as the *scope proposition* in the evidentiality literature, on the first dimension of a 2D logical form and the reportative component on the second (see McCready 2008 for discussion of such a 2D analysis of evidentiality):

(42) Allegedly, Mary is ill
$\approx \left\langle \begin{array}{c} \text{Mary is ill} \\ \text{I've been told that Mary is ill} \end{array} \right\rangle$

To make this precise and compositional, we propose the following lexical interpretation of *allegedly* and other reportative markers (Gitksan *gat*, Dutch *schijnen*):

(43) $\mathbb{T}(\text{allegedly}) = \mathbb{T}(\text{gat}) = \mathbb{T}(\text{schijnen}) = \lambda p_{st} \left\langle \begin{array}{c} p \\ HEARSAY(p) \end{array} \right\rangle$

The predicate *HEARSAY* in the second dimension is a traditional Hintikka-style propositional attitude operator, indicating that the actual speaker has hearsay evidence for a proposition from some source:[20]

(44) $p \in [\![HEARSAY]\!]^c_w$ iff for all w' compatible with the information the agent of c heard in w, $w' \in p$.

In the following we illustrate our semantics by focusing on (clause-initial) *allegedly* as a concrete example.

Just as in eventive indirect discourse, we use Intensional Function Application to fit the sentential type t argument into a type st argument slot (by adding $^\wedge$).

19 See footnote 23.

20 We abstract away from any finer semantic distinctions (e.g. between *supposedly*, *reportedly* and *allegedly*, or between those and Gitksan *gat* and St'át'imcets *ku7*) and syntactic details (e.g. the reportative modal *schijnen* has to undergo raising to be interpreted as a sentential operator).

(45) $\mathbb{T}$(Allegedly, Mary is ill) = $\left\langle \begin{array}{c} {}^{\wedge}ill(mary) \\ HEARSAY({}^{\wedge}ill(mary)) \end{array} \right\rangle$

We deliberately do not 'extensionalize' (with $^{\vee}$) this proposition to get a regular assertive sentence contribution (of type t) in the first dimension of (45). Instead, in section 5.3 we will slightly modify our pragmatic treatment of 2D logical forms from section 3.2 in order to turn these intensional 2D logical forms to our advantage in dealing with a phenomenon known in the evidentiality literature as *reportative exceptionality*. But first, in the next subsection, we evaluate the compositional, syntax–semantics part of our proposal thus far.

5.2 Evaluating 2D logical forms for reportative evidentials

5.2.1 At-issueness characteristics

The Pottsian derivation of 2D logical forms for complex sentences forces projection of the reportative meaning component, which correctly predicts the not-at-issue behavior diagnosed by the In Situ Interpretation Test of section 2. Although many of the evidential-type constructions mentioned above are syntactically restricted to main clauses, so the test doesn't apply, the constructions that can be embedded do show projection, or rather, they don't show in situ interpretation. In (3) we saw an example with the Dutch reportative modal *schijnen* embedded in the antecedent of a conditional. In (46) we see a similar example with the reportative marker *ku7* from St'át'imcets that does not allow the rather sensible reading you'd get with an in situ interpretation of the reportative ('if you hear that Sonja arrives, tell me').[21]

(46) *lh-t'íq-as ku7 k Sonja, sqwal'-en-ts-kál'ap
HYP-*arrive*-3CONJ REPORT DET *Sonja* *tell*-DIR-*1*SG.OBJ-2PL.SUBJ
'If [reportedly] Sonja arrives, tell me' [St'át'imcets, Matthewson et al. (2007)]

We confirmed the not-at-issue status of Dutch *schijnen* with the What Makes You Think Test in section 2. We can see the same pattern for the reportative enclitic *gat* in Gitksan, an evidential language in the strict sense of Aikhenvald (2004).[22]

21 Note that the semantics we proposed for the hearsay operator in (44) doesn't account for the 'interrogative/imperative flip': in assertions the operator refers to what the speaker heard, but in an imperative like (46) it would refer to what the addressee heard. The solution would be to redefine hearsay relative to the 'perspectival center' of the current speech act, rather then simply the agent of the context. This perspectival center would amount to the speaker in an assertion and the addressee in addressee-oriented speech acts like imperatives and questions.

22 Same methodology as in example (7): Consultants were first asked to translate the individual English sentences into Gitksan and were then given the dialogues in (47) and asked whether these were okay. According to our consultant, felicitous answers to A' would be sentences like *he packed his net*, *he*

(47) A: gu gan ha'niigood-in win sin-hun=s John ky'oots?
what REAS *think.*2SG.II COMP *hunt-fish*=PN *John yesterday*
'Why do you think John went fishing yesterday?' / 'What's your evidence to think that John went fishing yesterday?'
B: #sin-hun=gat John ky'oots.
hunt-fish=REP *John yesterday*
'John went fishing yesterday, I'm told.'

The fact that (47B) does not provide a felicitous answer to (47A) shows that the reportative proposition is not-at-issue.[23]

This pattern is predicted by our 2D formal analysis in combination with our dialogue model from section 3. In a dialogue like (47), A's question gets added to the QUD stack, and then B's assertion gets analyzed as a 2D logical form, of which the second dimension, the reportative proposition, updates the context set, while the first, the scope proposition, gets put on top of the proposal stack, but only on the condition that it addresses the top QUD. In other words, the scope proposition has to address A's question on pains of infelicity. Since A's question in (47) is not about the scope proposition p but about the speaker's evidence for p, we correctly predict infelicity because the derived proposal that p fails to address that question.

The Challengeability Test, finally, also shows not-at-issueness. In section 2 we showed the relevant data for Gitksan in (7). Similar observations have been made about, for example, Cuzco Quechua (Faller 2014), Cheyenne (Murray 2009), and Turkish and Bulgarian (Korotkova 2016). The pattern extends to the Dutch reportative *schijnen*, where an interlocutor may challenge the reported proposition, as in B's objection in (48), but not just the reporting, as in B':

(48) A: Anne schijnt ziek te zijn.
'Anne is ill, reportedly.'
B: Onzin. Ik weet niet wat je gehoord hebt, maar ze is kerngezond.
'Nonsense. I don't know what you heard, but she's very healthy.'

shouldered his gaffhook, *he carried his rod and reel*.

23 Just to be safe we can always apply the same test to check that the other proposition in the logical form, the scope proposition, *is* at-issue. We won't do this for all tests, but here is the relevant data point for Gitksan:

(i) A: gu gan wil=hl nee=dii di-t'aa=s John ky'oots?
what REAS COMP=CN NEG=FOC DUR-*sit*=PN *John yesterday*
'Why was John not at home yesterday?'
B: sin-hun=gat John ky'oots.
hunt-fish=REP *John yesterday*
'John went fishing yesterday, I'm told.'

B': #Onzin. Niemand heeft dat beweerd, ook al is ze misschien wel ziek.
'Nonsense, nobody said that, though she might be sick.' [Dutch]

Our semantics and pragmatics predicts this behavior: A's assertion gets analyzed as a 2D logical form, so the second dimension, the reportative proposition, pre-updates the common ground, while the scope proposition (that she's sick in (48)) gets put on the proposal stack for discussion. B's answer indicates a rejection of the proposal, taking the proposition that Anne is ill from the table. The pre-update, with the proposition that someone told A about Anne's illness, survives B's rejection, which is what we observe in (48). The infelicity of the B' answer is accounted for in our system because a rejection can only target what's on the table, not the pre-update.[24]

5.2.2 Eventivity characteristics

We now turn, more briefly, to the eventivity tests. First, in evidential reports the manner of speaking or hearing can't be modified abverbially, as witness (9). This follows directly from our decision to use a Hintikka-style hearsay operator rather than a Davidsonian semantics with contentful events for evidentials.

In (10) we also saw that evidential reports with *allegedly* are indeed unable to answer 'eventive questions' like *What happened next?*. This also follows directly from the absence of a speech event in the logical form: The fact that *p* holds in all worlds compatible with what I heard is a fact, or at best a state, but not an event that could count as an answer to *What happened?*. If, as in the example in (10), the scope proposition *p* itself is also stative, we correctly predict the answer to be infelicitous.

As for the Anaphoricity Heuristic, finally, note that the evidential report constructions discussed here occur happily out of the blue, that is, without the earlier introduction of a speech event or a contextually salient conversation to connect to. Example (49), where the question could be a discourse-initial move, shows this point:

(49) A. Hé, kom je vanavond ook op Peters feestje?
'Hi, are you coming to Peter's party tonight?'
B. Nou, ik weet niet. Rick schijnt ook te komen.
'Well, I don't know. Rick is also coming reportedly.' [Dutch]

The same for Gitksan (50):

(50) Context: A friend of yours heard you were getting married and congratulates you when you meet her in the store.

24 In addition, we allow for a so-called 'Bullshit operator' (Spenader & Maier 2009) that negates the entire contribution of the previous speech act.

dim naksgat n'iin
FUT *marry*.REP *2sg*
'[I heard] you're getting married!' [Gitksan, Peterson 2010: 51]

The Hintikka-style hearsay operator in our semantics indeed does not come with any anaphoric dependencies or presuppositions with respect to earlier conversations. We return to this point when we contrast it with reportative moods in section 6.3.[25]

5.3 The pragmatics of reportative evidentials: hedged commitments and reportative exceptionality

Non-reportative evidential markers such as direct or inferential ones entail that the speaker is committed to the scope proposition in the sense that she can't follow the evidential with a denial of it's scope content:

(51) # Para-sha-n-mi, ichaqa mana crei-ni-chu.
rain-PROG-*3-mi but not believe-1*-NEG
'It is raining but I don't believe it.' [Cuzco Quechua, Faller 2002: 163]

(52) # Aya-llru-llini-uq
leave-PAST-INF-IND.3SG
... Aya-ksaite-llru-yuk-aa.
... *leave*-NEG-PAST-*think.that*-IND.1SG$_s$-3SG$_o$
'Evidently she left ... [but] I don't think that she left.' [Yup'ik, Krawczyk 2012:22]

Some reportative evidentials, such as *ku7* in St'át'imcets, have been claimed to show the same pattern:

(53) # um'-en-tsal-itás ku7 i án'was-a xetspqíqen'kst
give-DIR-*1*SG.OBJ-*3*PL.ERG REPORT DET.PL *two*-EXIS *hundred*
táola, t'u7 aoz kw s-7um'-en-tsál-itas ku stam'
dollar but NEG DET NOM-*give*-DIR-1S.OBJ-3P.ERG DET *what*
'[Reportedly,] They gave me $200 , but they didn't give me anything.'
[St'át'imcets, Matthewson et al. 2007: ex. 28]

Now compare that with the canonical, eventive report constructions of section 4,

25 Note that it is only reportative evidentials (and not evidentials in general) for which we claim that there is no event variable present. Our proposal is thus consistent with Koev's (2017) eventive analysis of the Bulgarian indirect evidential marker *-l*, historically related to the present perfect morphology. Koev argues that one advantage of his account over competing modal ones is that it accounts for the fact that this marker yields full commitment to the scope proposition, something which is never found with reportative markers.

where the speaker expresses no commitment to the reported content whatsoever:

(54) John said {"I didn't do it"/that he didn't do it}, but he clearly did.

When I report John's words in this way I clearly do not implicate my own belief in or acceptance of their truthfulness.

The vast majority of instances of what we are calling not-at-issue non-eventive reports, including most so-called reportative evidentials and reportative modals, seem to fall somewhere in between on the scope commitment scale. For instance, one of the reasons for saying (55a) is to suggest that Trump is dishonest, and (55b) can be intended to convince the addressee to come see that movie:

(55) a. Allegedly, Trump even cheats at golf.
b. Die nieuwe Jim Jarmusch film schijnt echt heel goed te zijn
That new Jim Jarmusch movie seems really very good to be
'[Reportedly,] that new Jim Jarmusch movie is really good.' [Dutch]

The speakers in (55) are not primarily interested in reporting the words of some journalist or film critic, rather, they're telling you that Trump is a cheater and that it's probably a good movie, and using the reportative marker mainly to add some not-at-issue evidential information, viz. that they don't have this from personal experience but from hearsay.

At the same time, adding the reportative does tend to signal a weakening of the speaker's commitment to the truth value of the scope proposition and allows her to maintain plausible deniability. This weakening effect can sometimes be brought out with a follow-up where the reporter explicitly further distances herself from the scope proposition:

(56) a. Pay-kuna-s ñoqa-man-qa qulqi-ta saqiy-wa-n. Mana-ma ni
(s)he-PL-REP *I*-ILLA-TOP *money*-ACC *leave*-1O-3 *not*-SURP *not*
un sol-ta saqi-sha-wa-n-chu
one Sol-ACC *leave*-PROG-1O-3-NEG
'They left me money, I was told. But no, they didn't leave me one Sol.'
[Cuzco Quechua, Faller 2002: 193]
b. Dadating daw siya sa isang oras, pero hindo talaga.
will.come DAW he in one hour but not really
'He says he will come in an hour, but in fact he won't.'
[Tagalog, Schwager 2010]
c. Anneloes schijnt thuis te zijn, maar ik geloof er niets
*Anneloes seems.*REP *at-home to be, but I believe there nothing*
van.
of

‘Anneloes is at home, I am told, but I don’t believe it.’
[Dutch, Koring 2013]

This weakening of ‘scope commitment’ in reportative evidential constructions has been dubbed ‘reportative exceptionality’ in the evidentiality literature (cf. AnderBois 2014 for a detailed overview), referring to the fact that this pattern is not found in any other types of evidentiality marking. A crucial puzzle in the evidentiality literature thus consists in reconciling this behavior with the information structuring diagnosed above: If the at-issue proposition contributed by a report is the scope proposition, how come the speaker is not committed to that?

Existing accounts differ on whether or not speaker commitment to the scope proposition is built into the semantics. On the one side, we have AnderBois (2014), who, from a crosslinguistic perspective, argues that scope commitment is part of the semantics of evidentials, analyzing exceptions in terms of a pragmatic perspective shift of the sort proposed by Harris & Potts (2010). On the opposite side, Faller (2002) argues for Cuzco Quechua that the reported content is not proposed to be added to the common ground at all: it is merely ‘presented’ rather than asserted. Murray (2014, 2017) offers a hybrid account for Cheyenne, distinguishing between what is on the table for discussion (viz. the plain scope proposition), and what eventually updates the common ground (viz. a suitably modalized version thereof).

Synthesizing the idea of a shift from AnderBois (2014), the idea of presenting rather than asserting information from Faller (2002) and that of distinghuising between what is proposed and what i updated from Murray (2017), we suggest the following picture: With a not-at-issue non-eventive construction, the speaker herself initially only *presents*, as Faller puts it, a main content, which we already model by generating a proposition of type *st* rather than *t* on the first dimension of the logical form, and hence on the proposal stack in our dialogue model from section 3.2. The idea there was that the top proposal is what’s on the table for discussion, leading either to rejection or acceptance. But what we accept (or reject) cannot, for logical type reasons, be the term of type *st* that we have as our at-issue component. We have to first bring it down to something ‘assertable’, something that can be judged true or false and that can hence be judged as addressing the QUD or not – in other words, something of type *t*. Inserting a default $^{\vee}$ operator to ‘fix the type mismatch’ would entail full commitment to the scope proposition. As we just saw in (56), that would be too strong for our not-at-issue non-eventive reporting constructions.[26]

26 St’át’imcets *ku7* from (53) is a notable exception here. To deal with this datum, however, we propose to follow a suggestion from Kratzer (2012: chapter 2) (in turn based on the data and analysis of Rullmann et al. 2008), and modify the lexical reportative contribution of *ku7*. Instead of introducing a ‘weak’ hearsay modal ($\approx$ based on the content of what I heard, φ must be true $\approx$ (44)) on the second dimension of the logical form, this marker lexically introduces a ‘strong’ modal, presupposing a circumstantial modal base ($\approx$ given these rumors I heard, φ must be true). We leave it for a future

We suggest that what we accept or reject in case of a 'propositional proposal' (type *st*) is a modalized version of the scope proposition. Using Kratzer's (1981) standard framework for representing modality, we take the relevant modal to be an epistemic necessity modal, formally represented as *MUST*, an operator of type $(st)t$. We assume that the context c supplies an epistemic modal base f_c for this modal, giving us the set of worlds epistemically accessible from w ($\bigcap f_c(w)$).[27]

(57) $[\![MUST(\varphi)]\!]^c_w = 1$ iff for all $w' \in \bigcap f_c(w)$, $w' \in [\![\varphi]\!]^c_w$.

In our dialogue model we now extend the definition of *ACCEPT* from (24a) to deal with proposals of type *st*:[28]

(58) $$ACCEPT(\langle c,C,Q,P\rangle) = \begin{cases} \langle c, C \cap [\![top(P)]\!]^c, pop(Q), pop(P)\rangle & \text{if } top(P) \text{ is of type } t \\ \langle c, C \cap [\![MUST(top(P))]\!]^c, pop(Q), pop(P)\rangle & \text{if } top(P) \text{ is of type } st \end{cases}$$

Let's pick up our basic example where we left off in section 5.1, i.e. (45), repeated below:

(59) $$\mathbb{T}\,(\text{Allegedly, Mary is ill}) = \left\langle \begin{array}{c} {}^{\wedge}ill(mary) \\ HEARSAY({}^{\wedge}ill(mary)) \end{array} \right\rangle$$

Let $\langle c,C,Q,P\rangle$ be a context in the sense of our dialogue model from section 3 where $top(Q)$ is the question why Mary is not at the meeting. The first step in the update process is as before:

(60) $$\begin{aligned} &\langle c,C,Q,P\rangle + \left\langle \begin{array}{c} {}^{\wedge}ill(mary) \\ HEARSAY({}^{\wedge}ill(mary)) \end{array} \right\rangle \\ &= \langle c, C \cap [\![HEARSAY({}^{\wedge}ill(mary))]\!], Q, push(P, {}^{\wedge}ill(mary))\rangle \end{aligned}$$

When we apply *ACCEPT* we effectively bring down the intensional type of the proposal by means of the *MUST* operator so that we can use it to update the common

occasion to spell out in more detail these two variants of the lexically introduced modal *HEARSAY*. As suggested by an anonymous reviewer, we could in principle view *commitment* as a third dimension in our typology. We have refrained from doing so in this paper since this distinction would apply only within the class of non-eventive, not-at-issue speech reports. All other speech reports are non-committal. It may be an interesting question for future research why we do not have 'committal' versions of our other reporting strategies.

27 f_c is not to be confused with the (here suppressed) assignment f, and note that φ in (57) is of type *st*.

28 Note that in our 2D update definition in (25) we also have a felicity condition that says that a proposal must address the top QUD. For a formal definition of the 'address' relation we referred to Simons et al. (2010). We must now extend that definition to cover terms of type *st* rather than just plain assertions of type *t*. Here's a simple proposal: a term ψ of type *st* addresses* a question φ? iff ${}^{\vee}\psi$ (i.e. the assertion that ψ is true) addresses the question.

ground:

(61) $ACCEPT(\langle c, C \cap [\![HEARSAY(^{\wedge}ill(mary))]\!], Q, push(P, ^{\wedge}ill(mary))\rangle) =$
$\langle c, C \cap [\![HEARSAY(^{\wedge}ill(mary))]\!] \cap [\![MUST(^{\wedge}ill(mary))]\!], Q, P\rangle)$

We've thus updated the context set with the information that the speaker has heard that Mary is ill, presented the proposition that she is ill as a proposal, and eventually, after acceptance by the discourse participants, further updated the context set with the information that, for all the speaker knows, Mary must be ill (where the speaker's epistemic modal base for this last modal hedging is determined by the context c).

Now let's return briefly to the explicit disavowal examples in (56), like Faller's Cuzco Quechua example, translated below (with *reportedly* representing the reportative evidential):

(62) They left me money, reportedly. But no, they didn't leave me one Sol.

Following the procedures outlined above we predict – assuming that a default acceptance occurs after both sentences of (62) – three subsequent updates to the common ground: the speaker heard that they left her money, for all she knows they left her money, and they didn't leave her any money. As all three are coming from the same speaker, i.e. uttered in the same context c, the latter two come close to a Moore paradox. After proposing that she believes they left her money, how can she go on to propose that they didn't? Our Dutch example from (56) brings out the apparent inconsistency even more clearly (again, translating the reportative evidential with *reportedly*):

(63) Anneloes is at home, reportedly, but I don't believe it.

Here the speaker proposes that Anneloes must (in the epistemic sense) be at home, and then proposes she doesn't believe Anneloes is at home.

The key to avoid paradox and inconsistency in these cases lies in the context-dependence of the modal base for our Kratzerian epistemic modal *MUST*. In (63) this modal picks out a different epistemic modal base from the explicit *believe* verb in the continuation. Perhaps the most plausible reading here ties the implicit modal to hearsay-based beliefs: for all I knew from hearsay sources, she's at home, but for all I really believe, upon careful reflection, pulling data from any and all sources available to me now, she is not. In such a reading the implicit *MUST* picks out a rather specific subset of epistemically accessible worlds, rendering the accepted modalized assertion very weak, perhaps even as weak as the pre-update with *HEARSAY* that is already added to the common ground. The explicit 'believe' verb then picks out a different subset of the agent's epistemically accessible worlds, rendering this apparent disavowal non-contradictory. To account for unmodalized disavowals like

(62) we'd have to first spell out the Moore-like paradox more precisely. Presumably we'd have to appeal to some epistemic norm of assertion in the pragmatics, and then we'd have to allow that norm to pick out a different modal base than the *MUST* operator. We leave the details of this interface of our semantics with speech act theory and the norms of assertion to a future occasion.

Finally, note that the idea of picking two distinct epistemic bases in (63) is corroborated by observations from Koring (2013) and AnderBois (2014) that in cases like these we tend to find particles and the like to bring out some kind of contrast, to the point where a plain disavowal would be slightly degraded:

(64) Anneloes schijnt thuis te zijn

a. maar ik geloof er niks van.
but I believe there nothing of

b. ?maar ik geloof het niet.

c. ??maar dat is niet zo

6 Not-at-issue eventive reports: parentheticals, moods, and quotatives

We have covered the two extremes of our classification: at-issue eventive and not-at-issue non-eventive. These cover the most discussed classes of report constructions, viz. (in)direct discourse and reportative evidentials. We've proposed a semantics built around contentful speech events for the first, and a two-dimensional semantics with an intensional *HEARSAY* operator for the second. In the latter, we started by distinguishing a reportative component from the reported content, and treating the first as a not-at-issue supplement. Eventive reports can be decomposed into the same two propositional components: someone said that p, and p itself. In canonical direct and indirect discourse in narrative contexts, the reportative component tends to be at-issue. But that need not always be the case, and in fact in this section we review various ways in which languages mark an arguably eventive reportative component as not-at-issue.

6.1 Parenthetical reports

First, consider the information structural effects of parentheticalization. In general, as we already saw in section 3.2, parentheticalization marks something as not-at-issue (Potts 2005). So we expect that the familiar parenthetical realizations of eventive reports should be classified as not-at-issue eventive.

Take indirect discourse, whose parentheticalized variant is occasionally discussed under the header of inverted indirect discourse (Verhagen 2012) or syntactically parenthetical indirect discourse (Hunter 2016).

(65) Mary doesn't want to come to my party tomorrow, Sue told me last week.

Note the unshifted *tomorrow* and *my*, which shows this is neither direct nor free indirect discourse. Without going into the syntactic/semantic details we'll assume something like a Pottsian 'comma feature' at LF to split the assertion into two dimensions, with which we compositionally derive a 2D logical form like (66) (Potts 2005), simplifying the contribution of the temporal elements:

(66) $$\left\langle \begin{array}{l} {}^{\wedge}\neg come(mary, my.party, tomorrow) \\ \\ \exists e[tell(e) \wedge addressee(e) = i \wedge time(e) = last.week \\ \wedge agent(e) = sue \wedge content(e) = {}^{\wedge}\neg come(mary, my.party, tomorrow)] \end{array} \right\rangle$$

When we feed this into our pragmatic discourse model we get a pre-update with the second dimension, followed by a proposal to update with the first – or rather a 'presentation' of the first, as it's an *st* term. If the proposal is not rejected a suitably modalized version, with our epistemic, context-dependent *MUST* operator, gets added to the common ground. In the end we are thus left with only worlds where there was a event of Sue telling the speaker Mary wasn't coming and, as far as the speaker knows (relative to some contextual modal base), Mary isn't coming.

To evaluate this proposal for analyzing parenthetical eventives as not-at-issue eventive reports we'll no longer go through all our tests but just pick a few representative ones and see how the semantics predicts the observed behavior.

Parenthetical indirect reports are just as just as easily modifiable as their canonical counterparts.This is fully explained by our event-based analysis. However, the two differ in their ability to directly answer a question about a saying event:[29]

(67) A: What happened next? Did anyone dare say anything?
B: Mary said in her thick New York accent that John is guilty
B'??John is guilty, Mary said in her thick New York accent.

On our analysis, the B' answer would amount to an update with Mary saying that John is guilty, followed by a proposal that John is guilty. But a proposal has to address the question to be felicitous. In this case, being guilty doesn't address the question whether someone said something, so we correctly predict the infelicity of the B' answer.

In a similar vein, we correctly predict the impossibility of using these constructions to answer the question *What makes you think?* (cf. (5)):

(68) A: What makes you think that Mary is ill?

29 de Vries (2006) shows a similar contrast for direct discourse. For reasons of space we focus here on indirect discourse.

B. #She has the flu, John said.

Although here, in contrast to (67), it is not required that the answer is eventive, the evidence that is asked for does need to be provided as at-issue information, i.e. at the first dimension. Since in the logical form predicted for (68) this information would be at the second one (cf. (66)), infelicity is the result.

The In Situ Interpretation Test is inconclusive for parenthetical reports. Example (69) does not have a reading where parenthetical *John said* is interpreted in the antecedent of the conditional:[30]

(69) #If Peter is ill, John said, then he is ill.
'If Peter is ill according to John, then he is ill.'

We can handle this impossibility with our 2D logical forms: the reportative component is on the second dimension and semantic operators only target the first. A different option would be to treat the impossibility purely syntactically.

In light of the discussion about commitment in 5.3 it is worth noting that our account predicts an epistemically hedged commitment for parentheticalized indirect reports, as opposed to a total lack of commitment for canonical indirect reports. As pointed out above, applying our discourse model to an eventive 2D logical form like (66) amounts to an update with an event of telling the speaker that Mary isn't coming, followed by an update to the effect that for all the speaker knows, it must be true that Mary isn't coming. Following the final remarks from section 5.3 it is important to note that this 'must' can be interpreted rather weakly, depending on the context. If there's some reason to assume that the speaker doubts the reliability of Mary's testimony, the second update could just mean 'as far as the speaker knows from hearsay, John did it', rendering the actual commitment expressed by the speaker with this hedged update rather trivial. In sum, though we predict a hedged commitment for parenthetical reports, as for evidentials, the context dependence of the modal hedging can account for cases where the speaker is known to doubt (or explicitly disavows) the content of the report.

6.2 Pragmatic backgrounding in indirect speech

Sometimes a not-at-issue interpretation arises through global discourse structure and coherence assumptions rather than being forced by a syntactic device like parentheticalization. This happens for instance in canonical indirect discourse in discourses like (70) (e.g. Simons 2007, Hunter 2016):

(70) A: Why is John not at the meeting?

30 Similar data for embedding in speech reports can be found in Koev (2019).

B: Mary said that he is ill.

We saw in (10) that indirect discourse report can be used as answer to the question *What happened next?*, indicating that the reportative component is at-issue eventive. Cases like (70), however, show that in the same sentence the information in the complement can also be at issue: It's the information in the complement that answers the question while the reportative component merely signals that the speaker has heard this information from Mary. The felicity of the discourse thus shows that a canonical indirect discourse complement can be made at-issue by discourse structure, resulting in a discourse-driven demotion of the reportative component to not-at-issue status.

How best to model this kind of information structuring in the semantics/pragmatics interface remains an open question. One perhaps overly simplistic option to consider would be to stick with our two-dimensional not-at-issue eventive logical forms and then posit a structural ambiguity or movement in the syntax/semantics interface. Alternatively, we can assume that under discourse structural pressure, we can insert the Pottsian comma feature alluded to above as a 'coercion operator' to split the logical form into two dimensions. In any case, the effect will be that we select a two-dimensional logical form when discourse coherence demands it (i.e., when a one-dimensional logical form fails to provide a coherent discourse interpretation).[31]

Concretely, in (70), the one-dimensional, at-issue eventive logical form would be incoherent because the occurrence of a speech act by Mary does not address the question about John's presence at the meeting. So we instead select the two-dimensional logical form (whether through movement at LF or 'comma coercion', or otherwise):

(71) $$\left\langle \begin{array}{c} {}^{\wedge}ill(john) \\ \exists e \in E[say(e) \wedge agent(e) = mary \wedge content(e) = {}^{\wedge}ill(john)] \end{array} \right\rangle$$

Our pragmatic dialogue model for 2D logical forms indeed predicts that this discourse is felicitous, as the proposal that John is ill would address the QUD. Unless explicitly rejected by other speech act participants, this would eventually result in an updated context where (i) there was a speech act (in a salient conversation) by Mary with the content that John is ill, and (ii) given some contextual epistemic modal base, for all the speaker knows, John must be ill.

31 A more radical alternative approach would be to distinguish two different types of not-at-issueness, a lexically/grammatically driven one (that we've encountered before and treated with the help of 2D logical forms), and a pragmatically driven one (that we're seeing here and that is taken care of pragmatically and doesn't show up in the syntax/semantics interface at all). We leave this latter option for future research, but refer to Koev (2018) who has argued for a diversity of notions of (not-)at-issueness.

Note that this eventive logical form accounts well for the possibility of modification (e.g. by adding *yesterday* to (70)). Some other tests are more difficult to apply, the reason being that the interpretation with the reportative component at-issue is always available as well. As a result, in the What Happened Next Test, the What Makes You Think Test, the Challengeability and the In Situ Interpretation Test this reading is picked should the one with the reporting component not-at-issue yield infelicity (and on a coercion approach, the latter one wouldn't even arise in the first place).

6.3 Reportative mood

There may be yet other sources of not-at-issueness in eventive reports. Consider for instance the Ancient Greek optative mood in examples like the following (=(12)):

(72) Meta tauta edidoto legein tôi boulomenôi; kai
*after that give.*PST.PASS.3SG *say.*INF *the.*DAT.SG *want.*PTCP.DAT *and*
elegon polloi kata tauta hoti pantos
*say.*PST.IMP.3PL *many.*NOM.PL PREP *same.*ACC COMP *all.*GEN
axia legoi Seuthês; kheimôn gar eiê
*worth.*ACC.PL *say.*OPT.3SG *Seuthes.*NOM *winter.*NOM *for be.*OPT.3SG
kai oute oikade apoplein tôi touto boulomenôi
*and nor home sail.*INF *the.*DAT.SG *that.*ACC.SG *want.*PTCP.DAT.SG
dunaton eiê, diagenesthai te en filiai oukh
*possible.*NOM.SG *be.*OPT.3SG *live.*INF *and in friendship.*DAT *not*
hoion te, ei deoi ônoumenous zen
*possible if had-to.*OPT *buy.*PTCP.ACC.PL *live.*INF
'After this the opportunity to speak was offered to any one who desired it; many **spoke** to the same effect, saying that Seuthes said things of supreme importance; for the season was winter, and it was not possible to sail back home, if that was what one wished, and impossible also to get along in a friendly country if they had to maintain themselves by purchasing …'
[Ancient Greek, X. An. 7.3.13]

The first optative (underlined *legoi*) is in the complement clause under the verb of saying *elegon*. The following optatives (also underlined) are no longer part of the same sentence (as shown by the presence of the particle *gar*, see Bary 2018). Still, the optative morphology marks these clauses as continuations of the explicit report. Below, we first establish the not-at-issue eventive nature of this reporting strategy on the basis of the Anaphoricity Heuristic and In Situ Interpretation Test. The findings will drive our proposal for a not-at-issue eventive logical form, which we'll extend

to the German reportative mood, and evaluate briefly by examining the predicted behaviors on the other tests.

As mentioned already in section 2.2 out of the blue reportative uses of the optative are very rare. The most natural habitat of the Greek optative is the complement clause of an indirect speech report. Unembedded occurrences typically offer more content of a specific earlier introduced speech event (as in (72)), which we take as evidence for eventivity, as per the Anaphoricity Heuristic.

For the In Situ Interpretation Test we've been looking at embedding in conditionals. The Greek example in (72) is a case in point. We repeat the relevant part in (73):

(73) diagenesthai te en filiai oukh hoion te, ei deoi
live.INF *and in friendship*.DAT *not possible if had-to*.OPT
ônoumenous zen
buy.PTCP.ACC.PL *live*.INF
'It was impossible also to get along in a friendly country if they had to maintain themselves by purchasing (they said)'

We see that the reportative contribution of the optative percolates up: the conditional clause as a whole is interpreted as the content of a speech report. Since this seems to be the only possible interpretation in other cases of antecedent-embedded reportative optatives as well, we can conclude on the basis of the In Situ Interpretation Test that the reportative meaning component is conventionally marked as not-at-issue.

The two test results above thus point towards a not-at-issue eventive analysis for the ancient Greek optative. More specifically, we translate the optative morphology as an operator that is raised above the clause, and that compositionally introduces a second dimension with a saying event (presupposing a specific conversation).

(74) $$\mathbb{T}(\text{OPT}) = \lambda p_{st} \left\langle \begin{array}{c} p \\ \exists e \in E[say(e) \wedge content(e) = p] \end{array} \right\rangle$$

Applied to (72) we get the following logical form:

(75) $$\mathbb{T}(\text{kheimôn gar eiê}) = \mathbb{T}([\text{OPT [it was winter]}]) = \left\langle \begin{array}{c} {}^{\wedge}winter \\ \exists e \in E[say(e) \wedge content(e) = {}^{\wedge}winter] \end{array} \right\rangle$$

Applying our now familiar semantics and pragmatics for 2D logical forms, (75) will give the right results for the examples above: (i) the saying event is not-at-issue (as seen in the projection behavior in (73)), and (ii) it is anaphorically dependent on a salient conversation in the context (which may be partially provided by a preceding at-issue eventive report, as in (72)).

In addition to the Ancient Greek optative, we will also consider data from the German reportative subjunctive (Fabricius-Hansen & Sæbø 2004, Kratzer 2016), which closely resembles the Greek optative for instance in forcing free-standing sentences to be interpreted as continuations of previous indirect speech reports, as in (76) (the second sentence – we return to the embedded subjunctive in the first sentence below).

(76) Er sagte sie sei schön. Sie habe grüne Augen.
he said she be-SUBJ *pretty she have*-SUBJ *green eyes*
'He said she's pretty. She has green eyes, he said." [German, Jäger 1971]

We checked with some native speakers that for German as for ancient Greek out of the blue cases are dispreferred. Indeed, one of our informants reacted that (77) is 'awkward though not entirely impossible but you need some orientation as to who is the source':

(77) A. Kommst du auch zu Hans' Party heute Abend?
'Hi, are you coming to Hans' party tonight?'
B. Weiss ich nicht. Rick käme (angeblich) auch.
'Well, I don't know. Rick is also coming reportedly.' [German]

This is in clear contrast with (49) with Dutch *schijnen* which is very natural in such a context.

As we'll verify with other tests below, our at-issue eventive analysis in (74) together with our pragmatic discourse framework will make the right predictions for unembedded occurrences. However, one of the striking features of reportative moods is that their reportative contribution seems to evaporate when embedded in an indirect speech. Not only do we never get an in situ interpretation (leading to a double report reading **they said that someone said that Seuthes said things of supreme importance* for (72) and **he said that someone said that she was pretty* for (76)) but there is no projection either. Instead, the reportative meaning component of an embedded optative/subjunctive mood seems to be canceled by (or 'filtered by', 'bound by', 'concordant with') the overt reporting verb. On the current analysis we get for the first sentence of (76):

(78) a. he [say [SUBJ [she be pretty]]]

b. $\left\langle \begin{array}{c} \exists e' \in E'[say(e') \wedge agent(e') = x \wedge content(e') = {}^{\wedge}pretty(y)] \\ \exists e \in E[say(e) \wedge content(e) = {}^{\wedge}pretty(y)] \end{array} \right\rangle$

Note first that this somewhat peculiar logical form may still lead to a sensible context update: there is speech event, part of a presupposed salient conversation, with content that y is pretty, and there must be a speech event, presumably part of

the same salient conversation, with the same content, uttered by x (and the existence of this speech event is what's on the table and what's supposed to answer the QUD). Unfortunately, (78b) does not quite capture the concord intuition, i.e. that the subjunctive gets filtered out by the overt saying verb, or put differently that the subjunctive here functions as a device to signal to the interpreter that we're in the scope of an indirect discourse construction. In fact, when we consider what happens when we embed (78) as a whole under negation or in a conditional (or under another speech or attitude verb), the predictions of (78b) would start to falter. To remedy this, there are roughly two options explored in the literature: (i) Fabricius-Hansen & Sæbø (2004) and Bary & Maier (2014), who have tried to give a purely (dynamic) semantic account of this cancelation effect whereby the reportative component is treated as a presupposition that literally gets bound (or satisfied) by the at-issue speech report; and (ii) Schlenker (2003) and von Stechow (2002), who have analyzed this cancelation at the level of morphosyntactic feature agreement and deletion. In principle we could implement either option in our current framework, but a detailed implementation and comparison would take us too far afield.[32]

We end this subsection again with a closer look at the various diagnostic tests and see how our semantics predicts the behavior that we see. First, we have to realize that much of our diagnostic manual is difficult to apply to an older stage of a language such as Ancient Greek: for example, as expected, we indeed do not find examples where the reportative contribution is challenged. But as always, the fact that something does not occur does not mean that it is impossible – especially since challenging is a dialogue move, and all we have is written texts. Nonetheless, statistical data from corpus analysis may provide some indirect evidence. In particular, it has been observed that discourse-coherence relations (Hobbs 1979, Asher & Lascarides 2003) within long stretches of indirect discourse with the optative such as (72) (which continues even longer than given here) are always established at the level of the reported content, without discourse interference from a speech event (see Haug et al. 2018 for a similar phenomenon in Latin, Bary 2018 for Ancient Greek). We can see this as the result of the not-at-issueness of the reportative contribution, because only at-issue propositions are available for attaching further discourse relations.[33]

As for the Modification Test, our not-at-issue eventive analysis predicts that modification should be impossible. This prediction is borne out, but again, we can

32 The morphosyntactic route would require no modification of our semantics and pragmatics, just an added stipulation in the syntax/semantics interface to the effect that in the case of concordant features the embedded one can be semantically ignored.

33 For Hunter & Asher (2016) this constraining of discourse relation attachment is actually the general idea behind our more specific forward looking Challengeability Test and backward looking question-anwering tests (What Happened Next Test and What Makes You Think Test, but also cases like (70) that show that the reported content is at-issue).

never be sure that what is not found is impossible.

We are in a better position to apply our tests to the German subjunctive. The eventive, not-at-issue analysis correctly predicts the behavior on the What Happened Next Test: German subjunctive marking on a stative predicate cannot be used to answer a question that asks specifically about a speech event:

(79) A: Was ist dann passiert? Hat jemand es gewagt etwas zu sagen?
what is then happened has someone it dared something to say
'What happened then? Did anyone dare say anything?'
B: Marie hat gesagt, dass Jan verrückt ist.
Marie has said that Jan crazy be
'Marie said that Jan is crazy'
B'??Jan sei verrückt.
Jan be-SUBJ *crazy*
'Jan is crazy, reportedly.' [German]

Modification likewise is impossible for German subjunctives:

(80) Marie sei gestern krank gewesen.
*Marie be.*SUBJ *yesterday ill been*
'Marie was reportedly ill yesterday' [German]

We can conclude that the behavior on our tests is as predicted by the not-at-issue eventive analysis in (74).

6.4 Quotative evidentials

According to the evidentiality literature there are evidentials that involve a direct quote, the so-called *quotatives*.[34] On our analysis in section 5 the type of constructions that are commonly called reportative evidentials are not-at-issue non-eventive reports. That means that their semantics doesn't introduce a speech event of which they can then specify the form, making the notion of a quotative evidential rather puzzling. A closer look at a sample of the languages that are claimed to have such quotatives, however, strongly suggests that they inhabit a different corner of the

34 To avoid confusion: this is not the only use of the term *quotative* in the evidentiality literature. The term is also used as a synonym for the whole class of reportative evidentials (e.g. in Waldie 2012) and for reportative evidentials that specify the source of the report as in English *according to* (Krawczyk 2012). Aikhenvald (2004) uses the word *quotative* in multiple ways (as reportatives that specify the source (p. 25), as reportatives that involve direct quotation (p. 423), and sometimes both criteria are required to be a quotative (p. 64)). When we conclude below that quotatives are not evidentials in the semantic sense, this primarily concerns constructions that specify the form of a reported speech act.

reportative landscape than (other) reportative evidentials.

The fact that the form of a speech event is specified already indicates the presence of a speech event variable in the logical form. The Modification Test confirms that quotatives are indeed eventive.[35] Consider first Plains Cree, an Algonquian language, spoken mostly in Saskatchewan and Alberta (Canada). Plains Cree is said to have a quotative evidential marker *itwê* in addition to reportative, nonfactual and dubitative evidentials (Blain & Déchaine 2007). An example is given in (81) (Kâ-Nîpitêhtêw (1998: 52, line 14); via Blain & Déchaine 2007):

(81) “â, namôy,” itwêw, “môy êwako ê-wî-atoskâtamân,” itwêw.
well NEG QUO NEG *that* CONJ-FUT-*engage.in(1)* QUO
‘. . . , “Well, no,” he said, “I am not going to engage in that,” he said.’
[Plains Cree]

When we look at the larger context in which the example occurs, it becomes clear that we’re really dealing with a description of a speech event, including reference to a specific source, time and conversation:

(82) Today, for example, when I spoke to this one [in the audience], I asked him about these six things, whether he was going to engage in them; and when I asked him the first time, for example, he said “Well, no, I am not going to engage in that.” [Kâ-Nîpitêhtêw 1998: 52]

We showed in section 5 how not-at-issue non-eventive speech reports are used to specify the source of evidence for a main proposition. This is natural in a way: Being non-eventive they are less useful for vividly recounting a specific dialogue. Eventive reports can in principle be used for both: they can be used both to provide evidence for the main point (as we often see with the pragmatically parenthetical constructions of section 6.2) and to help tell a story by describing specific speech events. However, as soon as only the form of a speech event is specified (and not the content), as is the case with quotatives, the contribution to the discourse can no longer be an evidential one, as there is no proposition introduced that evidence could be provided for. Note in this respect that in no sense does the actual speaker of (81) use *itwê* to provide evidence for the scope proposition (given by the reported words). In other words, so-called quotative evidentials are not evidentials in any semantic or intuitive sense.

Note also that morphosyntactically, the quotative is again the odd one out in the evidential paradigm of Plains Cree: whereas the other evidentials in this language are particles, *itwê* is a verb (Blain & Déchaine 2007: 261), as it can be inflected

35 We don’t have the data available to apply the other eventivity diagnostics (What Happened Next Test and Anaphoricity Heuristic). We leave that for future work.

for first-, second-, or third-person, and tense/aspect. It also seems to be the only evidential form that allows recursive embedding (*John said: "Mary said '… ' "*).

We take these facts about Plains Cree to suggest that we're really dealing with an eventive report construction, with the person, tense and quote each specifying features of a reported speech event – on a par with the English direct speech construction in section 4.

In languages where the quotative marker is not a verb but a clitic or particle, quotatives also behave rather differently from other evidentials. In the evidential systems of these languages, quotatives are the only ones that can occur with imperatives (see e.g. Boye 2012:204-206 on Kannada). The incompatibility of evidentials with imperatives is expected since the notion of providing evidence to a scope proposition is not applicable in the case of non-propositional speech acts.[36] An eventive analysis, by contrast, allows quotatives with any speech act type, just as we can quote questions and imperatives in direct speech in English. On the basis of these data we suggest that quotatives are best analyzed as eventive, like direct speech constructions but unlike evidentials (in line with Boye's (2012) considerations to exclude quotatives as evidential markers).[37]

We conclude that the type of constructions that are sometimes called quotatives live in a different side of the speech reporting landscape than reportative evidentials, viz. the eventive side. Unfortunately we do not currently have the necessary data to determine whether these quotative markers are at-issue or not-at-issue (but we imagine that not-at-issue behavior is what made Blain & Déchaine 2007 and others treat *itwê* as a quotative evidential in the first place). It also remains to be seen whether the various strategies labeled as quotatives in this sense (conceptualized as 'evidentials' that specify the form of a reported speech act, see footnote 34 for other uses) form a homogeneous class or differ in fundamental respects from each other.

7 At-issue non-eventive reports: *according to*

We conclude with a brief examination of the most elusive category predicted by our typology: at-issue non-eventive reports. This cell has fewer inhabitants than

36 Propositional analyses of imperatives exist, most notably that of Kaufmann (2012). Such accounts then would need to explain why it is that only quotatives and not (other) reportative evidentials are compatible with imperatives.

37 Korotkova's (2017) also sets what she calls 'quotative evidentials' apart from other kinds of evidentials. Her definition of quotatives however differs from ours in that in her terminology they do not necessarily involve a direct quote but they express a 'relayed speech act'. Indeed, there seems to be a difference in this respect between e.g. Mbyá *je* which features prominently in her account (using data from Thomas 2014) on the one hand, and Plains Cree *itwê* and Kannada *anta* on the other, in terms of the behavior of indexicals (see Thomas (2014: section 3.3) for the relevant Mbyá data). The analysis proposed in the present paper only holds for quotatives in our stricter sense.

the others, which is probably to be expected from a functional, communication-theoretic perspective: if the reporting component (and not the content of the report) is what is at-issue in a given speech report, one can expect that there is some interest in the speech event (e.g. its form, and how it relates temporally to other events described), resulting in the choice for an eventive reporting strategy. Why else would the reporting component be at issue? That said, the two notions are not contradictory and one context where we would expect the combination to be felicitous is in answer to the question *What makes you think (that Mary is ill)?*, where the (at-issue) answer could theoretically just be that the speaker has hearsay evidence for this.

In section 1 we've already suggested that English *according to*, as in (83), may belong to this category.

(83) According to Theresa May, any extension of Article 50 will have to be a short, one-time-only deal.

The What Makes You Think Test unfortunately doesn't give a clear result:

(84) A: What makes you think that Mary is ill?
B. John said/told me that Mary has the flu.
B'. ?According to John Mary has the flu.

Although dispreferred over indirect speech as in (84B), *according to* is better in such contexts than e.g. Dutch *schijnen* (see (5)).

The other tests give a clearer picture. Take the In Situ Interpretation Test. We can see that, just like Dutch *volgens* ('according to') in (3), the reportative meaning component of *according to* doesn't project by noting that a conditional like (85) has a non-tautological reading:

(85) If Piet is ill according to Jan, then he is ill.

In this, *according to* patterns with canonical indirect discourse ('if Jan says Piet is ill, then he is ill') rather than with not-at-issue speech reports (e.g. the nonsensical or at least near tautological 'if Piet is ill, reportedly, then he is ill'). This in situ behavior indicates that we're dealing with an at-issue reporting strategy.

Next, consider the Anaphoricity Heuristic to detect eventivity. It seems that an *according to* construction is perfectly fine out of the blue, as in a newspaper headline or opening paragraph. It requires no overt speech report construction already established in the discourse record. It thus patterns with non-eventives, like evidentials and modals, rather than with eventives like direct and indirect discourse and reportative moods.

The Modification Test points in the same direction. Speech act modifiers are clearly out, supporting a non-eventive analysis (given that we've ruled out not-at-

issueness already):[38]

(86) According to Sumo {*loudly/*over the phone} the movie is terrible.

A semantics for *according to* that predicts precisely these at-issue non-eventive behaviors is rather straightforward. In fact, it's just an application of the traditional Hintikka analysis of propositional attitude reporting as intensional operators. All we need is a generalization of the *HEARSAY* operator that takes a source argument (cf. (44) from section 5; see also Kaufmann & Kaufmann 2019 for a similar proposal):

(87) a. $\mathbb{T}(\text{according to}) = \lambda x \lambda p.HEARSAY'(p,x)$
b. $\langle p,x\rangle \in [\![HEARSAY']\!]^c_w = 1$ iff all w' compatible with what the speaker heard from x in w, $[\![p]\!](w') = 1$

In sum, our typology predicts four classes of reports. For three of these it's been easy to find examples from different languages that meet the criteria. One class, at-issue non-eventives, is clearly less densely populated, although the predicted semantic profile is quite clear and not contradictory. We've tentatively argued here that English *according to* fits the description although the test results are less clear here than in the other classes, pointing to the need for further research.

8 Conclusion

We often refer to what other people have said. And we do so for different reasons and using a variety of different constructions. In this paper we've proposed a classification of speech reporting strategies along two dimensions: at-issueness and eventivity.

The first distinction has already featured prominently in the (evidentiality) literature. It concerns the distinction between reports where the fact that something is said is at-issue versus reports where not the reportative component but the content of what was said is the primary piece of information.

The second distinction of our classification is just as important to understand the differences between the various speech report options natural languages offer and the ways these are used in communication. Only some types of reporting introduce a speech event into the discourse record, presupposing a particular conversation. It is only these eventive reports that can be used to describe certain details about the

38 Some speakers accept some forms of temporal and locative modification:

(i) According to Sue {yesterday/in New York} the weather was terrible.

However, it is not clear what the underlying syntax of these acceptable readings is. Is the modifier really modifying the *according to* phrase, or just the individual ('John-in-New-York', as in 'our reporter in New York'), or perhaps there's an ellipsed relative clause ('John, who was in New York')?

speech event itself – e.g. the actual words, or the manner of speaking. This aspect makes eventive reports especially useful for vivid characterizations of dialogues between characters in a story. By contrast, non-eventive speech reports are more at home in everyday communication, where it can be useful to specify what kind of evidence we have for certain claims – whether to convince the hearer of the primary content or rather to distance ourselves from it.

These two distinctions result in four classes of speech reports. In this paper we have proposed a number of tests to determine to what class a given reporting strategy belongs. We then proposed matching semantic analyses for various constructions belonging to each class, and developed a very general pragmatic dialogue/discourse model à la Farkas & Bruce (2009) to model how these logical forms can be used to update a discourse context (containing the common ground, a stack of QUDs and a stack of proposals). Finally, in each class, we verified that these semantic analyses in combination with this general pragmatic framework correctly predict the behavior on the tests.

Sketching the landscape of reports along two comparative concepts has brought order to the scattered body of data and theories about the various reporting constructions. In addition to the two well-known classes of reporting constructions – at-issue eventives (direct and indirect discourse) and not-at-issue non-eventives (reportative evidentials) – we also identified report markers that express the two other possible combinations of features. While *according to* is arguably best understood as an at-issue non-eventive report marker, reportative moods have the opposite combination of features. By charting the landscape of speech reports, we've brought out new insights on the nature of so-called quotative evidentials (as constructions that are eventive and not properly deserving the label 'evidential') and German and Ancient Greek reportative moods (as report markers that have their not-at-issueness in common with evidential markers, but share their eventivity with regular indirect discourse).

The investigation brought out some additional insights along the way. To single out a few: (i) Untangling the eventive and at-issue dimension brought clarity as to how different tests (most of them already used in some form in the literature) relate to each other. (ii) We gathered crucial new data from a prototypical evidential language, Gitksan, on e.g. the What Makes You Think Test (in addition to some novel data on reporting in Dutch, English, and German). (iii) Within our general framework we proposed a solution to the familiar puzzle of reportative exceptionality in terms of a switch to a different modal base.

The analysis offered in this paper thus provides a thoroughly unified framework for studying the interplay between syntax, semantics, discourse structure, and pragmatics of reporting, backgrounding, and evidentiality.

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