Embedded Intonation and Quotative Complements to Verbs of Speech[*]

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COMMENTS WELCOME

INTRODUCTION

In doing linguistic analysis, as a matter of course we need to make finer-grained distinctions about language than are made by people not pursuing linguistic analysis. A paradigm example of a distinction crucial to linguistic analysis that is not regularly made in ordinary conversation comes from the concept of QUESTION (Partee 2009), as applied to sentences like (1) to distinguish them from sentences like (2).

(1)   Does Polina like her job?

(2)   Polina likes her job.

When we say that (1) is a question, there's three things we could be referring to:

  I. A category of SYNTACTIC OBJECTS: in English, a clause characterized by subject-auxiliary inversion in root contexts and by the presence of the complementizer *whether* or *if* in embedded clauses without *wh*-words, and so on

II. A category of SEMANTIC OBJECTS: often analyzed as a non-singleton set of propositions (Hamblin 1971, Karttunen 1977) and typically taken to be the characteristic denotation of the corresponding syntactic category

III. A category of ILLOCUTIONARY ACTS: namely, those by which the speaker requests information from the addressee through particular conventional means, e.g. raising an issue without making a commitment that could resolve it (Farkas & Bruce 2010)

Throughout this paper, I'll use the term INTERROGATIVE CLAUSE (or just INTERROGATIVE) to refer to the syntactic category; the term QUESTION to refer exclusively to the semantic category; and the term ASKING to refer to the illocutionary category. For their corresponding categories relevant to describing sentences like (2) I'll use the terms DECLARATIVE (CLAUSE), (SINGLETON) PROPOSITION, and ASSERTION.

It's typical, though hardly logically necessary, to propose a tight connection between the syntactic category and the semantic category: it's a common assumption since Hamblin (1971) that declarative clauses denote (singleton) propositions and interrogative clauses denote (non-singleton) questions, but it has sometimes been proposed that polar interrogatives have singleton denotations (e.g. Biezma & Rawlins 2012) or that non-singleton denotations are involved in the semantics of declarative clauses containing things like disjunction (e.g. Alonso-Ovalle 2006) and indefinites (e.g. Kratzer & Shimoyama 2002). The relation between the semantic object and the illocutionary act is a bit less robustly theorized, but some frameworks suppose a tight connection between them as well (e.g. Inquisitive Semantics, which attaches the 'inquisitive' potential of a sentence to features of its denotation; Ciardelli et al. 2018), while others do not (e.g. Gunlogson 2001, Biezma & Rawlins 2012).[1]

Rising declaratives provide a crucial stress-test of theories of the relations between syntactic categories, semantic categories, and illocutionary acts. A rising declarative (RD) is a syntactically declarative sentence accompanied by a steeply, monotonically rising terminal contour (L* H-H%, indicated throughout with a sentence-final ?):

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[1]Note that this discussion assumes that semantic objects are static, and that those objects are mapped to context updates by virtue of dynamic update operations that are instantiated by utterances (see e.g. Farkas & Roelofsen 2017). The distinction between semantic content and illocutionary force is conflated entirely on "dynamic semantics" accounts that treat update potentials themselves as semantic denotata (Kamp 1981, Heim 1982, Groenendijk & Stokhof 1991, Veltman 1996). It's worth clarifying a difficult terminological point here. I reserve the term SEMANTICS for that which is truth-conditional and linguistically conventionalized, and PRAGMATICS for that which is not linguistically conventionalized. On many analyses of constructions like rising declaratives, it is posited that there are elements of linguistic form, like rising intonation, that have conventionalized language-specific meanings that operate on the level of context update, not on the level of truth-conditional semantics (e.g. Gunlogson 2001, Rudin 2022). Given those views, and my preferred terminology, the contribution of intonational tunes to the meaning of a sentence is neither semantic (because it's not truth-conditional) nor pragmatic (because it's linguistically conventionalized). Rather, it's a third thing: conventionalized illocutionary meaning, or, perhaps more conservatively, meaning on the level of CONVENTIONAL DISCOURSE EFFECTS (Farkas 2022). For different terminological choices made by people whose worldview is, as far as I can tell, no different than mine, see Murray & Starr's (2020) argument that some dynamic update effects are "semantic", by which they seem to mean conventionalized, but not necessary truth-conditional; and the tradition of "dynamic pragmatics" (Roberts 1996, Portner 2004, Lauer 2013), where the domain of "pragmatics" is, by definition, everything that is involved in mapping a static semantic object onto a context update, potentially including conventionalized factors.

(3)   a. This is the last flight to San Francisco?
       b. Olivia won an Oscar?
       c. You have a daughter?

An RD is not an interrogative clause, but its utterance does carry out an asking, albeit one that doesn't have quite the same empirical profile as askings carried out with interrogative clauses (for detailed empirical descriptions of the bias effects associated with rising declaratives see Gunlogson 2001, 2008, Farkas & Roelofsen 2017, Westera 2017, Jeong 2018, Rudin 2022). Because of the existence of declarative clauses that carry out askings, there must be a leak somewhere in the pipeline from syntactic object to illocutionary act. There are two places where that leak could happen. RDs could denote questions despite being declarative clauses, indicating a mismatch between syntax and semantics. Or utterances of RDs could instantiate askings despite denoting a (singleton) proposition, indicating a mismatch between semantics and illocution. Both options have been proposed in the literature (on the former, see Farkas & Roelofsen 2017 and Jeong 2018; on the latter, see Gunlogson 2001, 2008, Truckenbrodt 2006, Nilsenová 2006, Malamud & Stephenson 2015, Krifka 2015, Westera 2017, Rudin 2018a, 2022, Goodhue 2021).

As is often the case with illocutionary phenomena, looking only at the behavior of root clauses makes it difficult to legislate arguments over what the semantics is responsible for, and what an illocutionary context-update mechanism is responsible for. Embedded clauses are helpful here, because the denotation of the embedded clause must compose with what it's embedded under, giving properly compositional evidence for what the semantic content of that embedded clause must be—see the importance of embedded interrogatives to the development of theories of the semantics of interrogative clauses (Karttunen 1977, Lahiri 2002, Dayal 2016, Uegaki 2023). Farkas & Roelofsen (2017) argue that the leak in the RD pipeline must be a syntax-semantics mismatch, because the acceptability of embedded RDs covaries with the semantic type preferences of the embedding verb (modified from F&R's ex. 27):

(4)   a.   Ayka {asked, wondered}, "Polina likes her job?"
       b. # Ayka {asserted, claimed}, "Polina likes her job?"[2]

Verbs that require interrogative complements, such as *wonder*, are comfortable embedding RDs. Verbs that require declarative complements, such as *claim*, cannot embed RDs. Farkas & Roelofsen (2017) take this observation to suggest that RDs are of the same semantic type as ordinary interrogatives, and capture this asymmetry by assigning RDs the same denotations as the corresponding polar interrogatives, explaining why they pattern with interrogatives with respect to their distribution in embedded contexts.

This paper revisits embedded RDs with closer scrutiny, and comes to the opposite conclusion. It turns out that embedded RDs tell us more about the semantics of quotative complements

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[2]F&R use *it appears*, not *asserted* or *claimed*, as their infelicitous embeddor. I diverge here because, as I'll note below, RDs are only felicitous with speech act verbs, providing an alternative explanation of the unacceptability of RDs with *it appears*. F&R also focus on cases where the RD is preposed; see §1.3 below for discussion.

to verbs of speech, and about the lexical semantics of rogative verbs of speech, than they tell us about the semantics of RDs. In miniature, the argument works like this: RDs can only be embedded under verbs of speech, and only as quotations. Quotative complements to verbs of speech do not have the same syntactic or semantic representation as non-quotative complements, and do not compose with verbs of speech by supplying them with the kinds of denotations that are supplied by their non-quotative complements; quotative speech reports have a different thematic structure than non-quotative speech reports. Therefore rogative verbs of speech cannot impose a restriction on their quotative complements that the quoted sentence denote a question. Rather, quotative complements involve demonstrative reference (Davidson 1979) to a PERFORMANCE which combines with verbs of speech via a DEMON-STRATION relation between events and performances (Clark & Gerrig 1990, Davidson 2015). The only restriction that applies to quotative complements to the verb *ask* is that their utterance comprise an asking. It is not necessary that an asking be an utterance of a sentence that denotes a question. In fact, the most crucial desideratum that must be met by any theory of RDs on which they denote propositions, of which there are many, is providing a well-defined sense in which utterances of RDs perform askings despite RDs not denoting questions. So there is no argument from embedded RDs that they denote questions; the facts are all predicted by theories on which they do not.

A roadmap for the rest of the paper. §1 presents an empirical investigation of embedded rising declaratives. It shows that they are uniformly interpreted as direct quotations, and uncorrelated with rogativity: they cannot appear under anything other than verbs of speech, regardless of rogativity, and can co-occur with both rogative and antirogative verbs of speech. Understanding the ramifications of their distribution requires a theory of quotative complements to verbs of speech. §2 motivates and formalizes a theory of the syntax and semantics of quotative complements to verbs of speech. Quotations are not assigned ordinary syntactic representations; instead, their syntactic representation is a covert demonstrative proform that refers to a paratactically associated cotemporaneous performance. Quotative complements to verbs of speech do not have the same thematic structure as ordinary complements to verbs of speech: quotative complements compose via a thematic relation of DEMON-STRATION, whereas ordinary complements compose via a thematic relation of CONTENT. Quotative complements are not subject to the same semantic restrictions that ordinary complements are subject to, as those are driven by the CONTENT relation. §3 applies this analysis of the syntax and semantics of quotative complements to embedded RDs, showing that the facts are not just compatible with, but predicted by theories on which they denote propositions. As quotative complements, RDs are subject only to the requirement that they comprise askings, not that they denote questions. And every theory on which RDs denote propositions supplies a well-defined sense in which they comprise askings nonetheless. But the argument doesn't swing the other direction—the facts are also compatible with theories on which RDs denote questions. §4 concludes by giving arguments for why analyses that assign propositional denotations to RDs are theoretically preferable to those that don't.

1 EMBEDDED RISING DECLARATIVES ARE QUOTATIVE

First, a preliminary note on what an embedded rising declarative even is. As mentioned above, a rising declarative is defined, in terms of its linguistic form, by two features: being a syntactically declarative clause accompanied by the L* H-H% intonational tune. This tune is a TERMINAL CONTOUR, created by linearizing a low pitch accent (L*) to the nuclear accent of an intonational phrase (IP), and distributing the phrase accent and boundary tone (H-H%) over the remaining prosodic material to the right of that nuclear accent. IPs are assumed to be the maximal prosodic category, typically containing entire sentences. It is generally impossible to map IPs onto syntactic constituents smaller than full sentences, i.e., embedded clauses. See Jun (2022) for an excellent overview of the state of the art in how prosodic phonology relates to intonational phonology.

So by rights, rising declaratives should be unembeddable in principle: they're defined in terms of an intonational tune that doesn't associate with embedded clauses. But they can be produced by forcing an intonational phrase break between the matrix verb and the embedded clause, parsing the embedded clause into its own IP, associated with its own intonational tune. With broad focus, the nuclear accent falls at the end of each IP, resulting in a pronunciation like this:

(5)   *H* L-L%*   *L* H-H%*
    Ayka {asked,   wondered}, Polina likes her job?

The first IP, containing the matrix layer, is associated with a falling tune. An IP break is associated with a fairly significant pause (a 4 juncture, Jun 2022), indicated here with a comma. The embedded clause is assigned its own intonational tune: a rising tune starting from the nuclear accent of the IP, which, with broad focus, lands on *job*. Throughout this paper I've placed embedded rising declaratives inside quotation marks, as I've found that that facilitates reading them as independent IPs. However, that's not crucial to the interpretive claims made in this section. What's crucial is that they're read as actual embedded RDs: assigned their own IP with a rising tune that is not shared by the full sentence, as in (5).

On to the data. A clause-embedding verb is ROGATIVE iff it embeds only interrogatives, AN-TIROGATIVE iff it embeds only declaratives, and RESPONSIVE if it embeds both (Lahiri 2002). Farkas & Roelofsen 2017 observe that the felicity of embedded RDs tracks the (anti)rogativity of the embedding verb:

(6) a.   Ayka {wondered, asked} {whether, *that} Polina likes her job.
    b.   Ayka {wondered, asked}, "Polina likes her job?"

The verbs *ask* and *wonder* select for interrogative complements, i.e., they are rogative (6a). They can also host embedded RDs (6b).

(7) a.   Ayka {asserted, claimed} {*whether, that} Polina likes her job.
    b. # Ayka {asserted, claimed}, "Polina likes her job?"

The verbs *assert* and *claim* select exclusively for declarative complements, i.e., they are antirogative (7a). They cannot host embedded RDs (7b).

To the extent that (anti)rogativity is due to restrictions that clause-embedding verbs place on the semantic type of their complements (for recent approaches, see Uegaki 2015, 2023, Theiler et al. 2019), the parallel distribution of interrogatives and RDs under clause-embedding verbs might suggest that they share a semantic type, to the exclusion of (falling) declaratives. In this section, I argue that this conclusion is too hasty. The distributions of interrogatives and RDs under clause-embedding verbs is not as parallel as the above examples make it seem: RDs can be embedded under antirogative manner-of-speech verbs, and cannot be embedded under rogative verbs that do not describe speech acts. There is no correlation between the embeddability of RDs and the (anti)rogativity of the embedding verb. In addition (and relatedly), embedded RDs can only be interpreted as quotations, as evidenced by the behavior of indexicals in embedded RDs, and by the impossibility of using an embedded RD to describe what the speaker is currently wondering, asking, and so on. So assessing the ramifications of the acceptability of RDs under *ask* and *wonder* must be mediated by a theory of quotative complements to speech-act verbs. I turn to this mediating theory in §2. I argue that this pattern tells us more about the lexical semantics of *ask* and *wonder*, and about the semantics of quotative complements to verbs of speech, than it tells us about RDs.

1.1 EMBEDDED RDS AREN'T CORRELATED WITH (ANTI)ROGATIVITY

The generalization that the felicity of embedded RDs tracks the rogativity of the embedding verb fails in both directions. There are many antirogative verbs under which RDs can be embedded. A wide variety of manner-of-speech verbs embed RDs:

(8)   Ayka {uttered, yelled, shouted, whispered, screeched, chanted, intoned, yelped, squawked, screamed, slurred, stuttered, . . . }, "Polina likes her job?"

These verbs are typically antirogative, undermining the generalization that embedded RDs have a parallel distribution to embedded interrogatives:

(9)   a.   Ayka {screeched, yelped, . . . } that Polina likes her job.
      b.   # Ayka {screeched, yelped, . . . } whether Polina likes her job.

In these cases, the embedding verb describes the manner in which Yorgos made an utterance whose content is the denotation of its complement (9a) or whose form is quoted as its complement (8). That RDs and interrogatives pull apart here suggests an alternative explanation for the unacceptability of RDs embedded under verbs like *assert* and *claim*: rather than being due to the RDs not meeting the semantic requirements such verbs place on the denotations of their complements, this unacceptability is simply due to the fact that these verbs are not accurate descriptions of the illocutionary acts carried out by utterances of RDs.[3] As has already been noted, utterances of RDs comprise askings, not assertions,

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[3]Note here again that *assert* and *claim* are my own examples of antirogative verbs under which RDs do not embed, not Farkas & Roelofsen's.

and so it is not accurate to describe an utterance of an RD as an assertion or a claim.

Interestingly, despite the fact that manner-of-speech verbs do not allow for interrogative complements (9b), they are perfectly comfortable embedding quotations whose form is interrogative:

(10)   Ayka {uttered, shouted, whispered, screeched, chanted, intoned, yelped, squawked, screamed, slurred, stuttered, . . . }, "Does Polina like her job?"

The contrast between (9b) and (10) suggests an asymmetry between the selectional requirements that verbs of speech place on their clausal complements and the selectional requirements that verbs of speech place on their quotative complements. Throughout this paper I'll call embedded clauses like those in (9) ORDINARY EMBEDDED CLAUSES or ORDINARY (CLAUSAL) COMPLEMENTS, and I'll call embedded clauses like that in (9b) QUOTATIVE COMPLEMENTS or EMBEDDED QUOTATIONS.[4] To foreshadow, §2 motivates and presents an analysis of quotative complements to verbs of speech that explains this asymmetry, and §3 shows how this asymmetry explains the acceptability of RDs under rogative speech act verbs, without necessitating that RDs denote questions.

The generalization that the felicity of embedded RDs tracks the rogativity of the embedding verb fails in the other direction as well: there are many rogative and responsive verbs under which RDs cannot be embedded. RDs are impossible under any verbs that are not verbs of speech, regardless of whether they embed questions:

(11)   a.   Ayka {is interested in, cares, learned, knew} whether Polina likes her job.
       b.   # Ayka {is interested in, cares, learned, knew}, "Polina likes her job?"

The argument that the acceptability of RDs under question-embedding verbs like *wonder* and *ask* tells us something about their denotation presupposes that, when embedded under such verbs, RDs are supplying them with a question denotation. If this is so, then (11b) shows that something stops RDs from doing so for verbs that aren't verbs of speech.

The distribution of embedded RDs is not actually correlated with rogativity. There are rogative verbs under which RDs cannot be embedded, and antirogative verbs under which they can. But irrespective of this, the fact remains that some rogative verbs of speech allow embedded RDs. In at least those cases in which RDs are grammatical under rogative verbs, are they indeed supplying question denotations to those verbs, in the same manner as embedded interrogatives? In the rest of this section, I argue that the answer to this question is no—embedded RDs are invariably quotative, and as such are never directly supplying a question denotation as a semantic argument to the embedding verb. If they are introducing a question denotation to the meaning of the sentence that contains them, they are doing so only mediated by the semantics of quotation-embedding. I turn to the theory of quotation-embedding under verbs of speech in §2.

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[4]One popular terminological alternative would be to refer to the case in (18a) as involving 'direct speech' and the case in (18b) as involving 'indirect speech'. I've avoided that terminology in this paper because I want to emphasize that there's an important syntactic distinction, not merely an important interpretational distinction, between the two types of speech report. See §2.1 for the syntactic arguments.

1.2 Indexicals in embedded RDs

Embedded RDs stubbornly resist being interpreted as ordinary complements of clause-embedding verbs, and instead are always interpreted as quotative comlements. The first argument for this comes from the behavior of indexicals in embedded RDs. Indexicals in embedded RDs cannot be interpreted relative to the context of the utterance of the matrix clause:

(12)   *[Context: **A**yka is talking to **B**ertrand about a conversation she had with Polina.]*
    a. **A**: Then Polina asked me, "Are you married?"
        You = **A**: ✓   You = **B**: #
    b. **A**: Then Polina asked me if you're married.
        You = **A**: #   You = **B**: ✓
    c. **A**: Then Polina asked me, "You're married?"
        You = **A**: ✓   You = **B**: #

The complement of *ask* in (12a) is unambiguously quotative. Though I've indicated this orthographically, the quotation marks are not necessary to disambiguate this—it displays subject-auxiliary inversion, and lacks a complementizer, both of which are impossible in ordinary embedded interrogatives (in Mainstream US English). This example shows that in quotative interrogative complements, indexicals must be interpreted relative to the context of Polina's utterance, not the context of Ayka's utterance (q.v. Sharvit 2008 a.o.). The clausal complement of *ask* in (12b) is unambiguously an ordinary clausal complement—there is an interrogative complementizer and no subject-auxiliary inversion, both of which are exclusively features of embedded interrogatives. This example shows that in ordinary interrogative complements, indexicals must be interpreted relative to the context of the utterance of the complete sentence, including the matrix clause. Embedded RDs pattern like quotative complements—there is no way of reading (12c) that allows the embedded indexical to take its meaning from the context of Ayka's utterance.

We see the same profile with temporal indexicals:

(13)   *[Context: It's Wednesday, and **A**yka is talking to **B**ertrand about a conversation she had with Polina on Tuesday.]*
    a. **A**: Then Polina asked, "Do you leave tomorrow?"
        tmrw = W: ✓   tmrw = Th: #
    b. **A**: Then Polina asked if you leave tomorrow.
        tmrw = W: #   tmrw = Th: ✓
    c. **A**: Then Polina asked, "You leave tomorrow?"
        tmrw = W: ✓   tmrw = Th: #

Again, we see that RDs pattern with unambiguously quotative: in (13a) and (13c), but not (13b), indexicals must be interpreted relative to the context of Polina's utterance rather than the context of Ayka's utterance.

1.3 SLIFTED RDs

We might worry that RDs are stubbornly quotative in embedded contexts simply because their intonational component is unembeddable. This is quite reasonable: the L* H-H% tune associated with rising declaratives is a TERMINAL CONTOUR, which is instantiated at the close of an entire intonational phrase, a phonological unit that contains the entire sentence (see further discussion in §2.1.1). So how could an embedded clause have its own terminal contour, to the exclusion of the matrix clause? The fact that RDs are defined in terms of an intonational tune that scopes over an entire sentence is congruent with Farkas & Roelofsen's (2017) proposal that the semantic reflex of this intonational tune occurs only at the root level, not at any embedded clause, predicting that RDs shouldn't be able to be semantically embedded.

However, for exactly this reason, Farkas & Roelofsen (2017) consider slifted RDs. In slifting (14b), a clause that is interpreted as a complement (the SLIFTED CLAUSE) appears to the left of its embeddor (the REMNANT), despite the fact that the sentence is equivalent in meaning to the canonical ordering (14a). Medial slifting is also possible, in which the remnant appears in the middle of the slifted clause (14c). Slifted clauses display root phenomena that are impossible in ordinary embedded clauses, like inversion in interrogatives (Ross 1973):

(14)   a. I wonder if Polina likes her job.
       b. Does Polina likes her job, I wonder?
       c. Does Polina, I wonder, like her job?

Note that there is not consensus about the correct syntactic analysis of slifting; for some recent perspectives see Grimshaw (2011), Haddican et al. (2014), Stepanov & Stateva (2016), Koev (2021). It's not necessarily the case that a slifted clause is actually a semantic complement of the remnant. It may instead be that the remnant is the result of null complement anaphora, and that the slifted clause is simply a normal root clause that serves as an antecedent (Roberts to appear). What is important for our purposes is that (14b) and (14c) are, by one means or another, semantically equivalent to (14a). To remain agnostic about the syntax, I will use scare quotes when referring to the slifted clause as 'embedded', and described it as 'associated with' its remnant.

That slifting might be a good way to get around the unembeddability of RDs is vindicated by the fact that the entire sentence is accompanied by an intonational tune that is normally associated with the embedded clause. Despite the fact that the unslifted sentence (14a) is accompanied by the H* L-L% falling tune characteristic of assertive utterances of declarative sentences, both slifting constructions (14b & 14c) are accompanied by a L* H-H% terminal contour characteristic of utterances of polar interrogatives, despite the fact that their meaning is the same as (14a). The L* pitch accent occurs within the slifted clause (in this case, on *Oscar*), and the H% boundary tone falls at the end of the sentence, resulting in a rise in pitch throughout the destressed remnant when it is sentence-final (14b).[5]

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[5]Note that this intonational pattern is much more natural with first-person present remnants, cf:

(1)   ??/* Does Polina like her job, Ayka wondered?

Licensing of root phenomena under slifting extends to licensing of a terminal contour appropriate to the 'embedded' clause, so if RDs are unembeddable for purely intonational reasons, slifting should get around the problem. However, slifted RDs, unlike slifted interrogatives, are unwilling to extend their terminal contour to the end of the sentence:

(15)   * Polina likes her job, I wonder?

It's impossible to assign a single rising intonational tune to a slifted rising declarative: this cannot be read with the same intonational profile as the slifted polar interrogative in (14b). In other words, even under slifting RDs remain stubbornly quotative: when they move left, their intonation stays where it was in the reported utterance, rather than realigning to the terminal position of the intonational phrase. And when a slifted RD is allowed to keep its intonation in place, the behavior of indexicals verifies that the RD is a quotation:

(16)   *[Context: **A**yka is talking to **B**ertrand about a conversation he had with Polina.]*
    a. **A**: "You're married?", Polina asked me.
       You = **A**: ✓   You = **B**: #
    b. **A**: "You're," Polina asked me, "married?"
       You = **A**: ✓   You = **B**: #

It appears that RDs simply can't be slifted except as quotations. This follows straightforwardly from theories on which slifting is derived via an ellipsis process deleting the complement of the verb under identity—on such theories, the verb *wonder* in (15) would need to be assigned a declarative complement to meet the identity requirement on ellipsis, causing ungrammaticality. But regardless of the explanation of why rising declaratives are stubbornly quotative even under slifting, it seems that slifted RDs don't show us anything different than non-slifted RDs do.

1.4   RDs embedded under first-person present

Observe something else about slifted interrogatives: a slifted interrogative associated with a first-person present tense remnant specifies what the speaker is currently wondering (or asking, or querying, etc., depending on the identity of the remnant verb). So for instance, the slifted interrogative in (14b) denotes the content of the speaker's current state of wondering. This interrogative, therefore, appears to supply a question denotation to the verb *wonder*, allowing the complete slifting construction to add up to a description of what the speaker is currently wondering. This is the behavior of an ordinary clausal complement, not a quotative complement—the slifted interrogative does not represent the form of another utterance.

As shown above, the behavior of indexicals in embedded RDs suggests that they are stubbornly quotative, i.e., they represent the form of another utterance. If this is true, then they should not be felicitous if embedded under first-person present, because under first-person present, they cannot be interpreted as representing the form of a separate utterance—there

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I don't have a ready explanation for this fact. I discuss slifting with first-person present for non-intonational reasons in §1.4.

can be no separate utterance that represents what the speaker is *currently* wondering. And indeed RDs are unacceptable under first-person present, irrespective of slifting:[6]

(17) a. # "You're married?", I {wonder, ask}.

b. # I {wonder,ask}, "You're married?"

Embedded RDs cannot be used to specify what the speaker is currently asking or wondering about, suggesting that do not compose with verbs by supplying them a question denotation in the same way as ordinary interrogative complements.

1.5 SUMMING UP THE FACTS

In the above investigation of the behavior of embedded RDs in a variety of environments, we've observed that the generalization that RDs can be embedded as complements to rogative verbs is misleading. RDs can only be embedded under verbs of speech, not under other rogative verbs. And they can be embedded under verbs of speech that are ordinarily antirogative. Finally, they are stubbornly interpreted as quotative when embedded.

Therefore, an argument about the ramifications of these embedding facts for a theory of the semantics of RDs can only be made relative to a theory of the syntax and semantics of quotative complements to verbs of speech. That account must explain why RDs can be quotative complements to verbs of speech that require their ordinary clausal complements to be interrogative. But it must also explain why RDs can be quotative complements to verbs of speech that require their ordinary clausal complements to be declarative, and why RDs cannot be clausal complements to verbs of speech like *assert* and *claim*, which generalization cannot be captured by appeal to (anti)rogativity alone.

In §2, I motivate and formalize a theory of the syntax and semantic of quotative complements to verbs of speech. In §3 I apply that analysis to RDs as quotative complements. We'll see that the embedding patterns of RDs do not provide an argument that they denote questions; the facts fall out unproblematically from theories that assign them propositional denotations, and provide a formal sense in which utterances of RDs nonetheless comprise askings.

2 THE SYNTAX AND SEMANTICS OF QUOTATION

This section motivates and presents an account of the syntax and semantics of quotative complements to verbs of speech. I argue for a Double-Davidsonian analysis of quotation, so called because it builds on proposals by Davidsons Donald (1979) and Kathryn (2015, no relation). On the Double-Davidsonian account of quotation, quotations involve demonstrative reference to a PERFORMANCE, which is related to a speech event by way of a relation

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[6] *Nota bene*: acceptability of these sorts of constructions improves if they are given a performative interpretation, along the lines of:

(1) I hereby ask: you're married?

of DEMONSTRATION. The crucial features of the Double-Davidsonian account are that quotations are not assigned a syntactic representation matching the structure that the quoted expression would be assigned outside of the context of quotation, and that quotative complements to verbs of speech do not compose with them by feeding them the same kind of denotation that a non-quotative complement would supply them with, or by playing the same thematic role that the denotations of their non-quotative complements play. Empirical discussion throughout this section is heavily indebted to Clark & Gerrig's (1990) remarkable study of quotation, though I've invented my own examples as suits my purposes.

§2.1 motivates the syntactic half of the Double-Davidsonian account: speech reports including quotations involve demonstrative reference to an accompanying PERFORMANCE, rather than representing the syntactic structure of the quoted expression within the speech report itself, as it would be represented outside of a quotative context. §2.2 motivates the semantic half of the Double-Davidsonian account: quotations are not subject to the semantic restrictions that apply to ordinary clausal complements to speech act verbs; they are related to speech events by a relation of DEMONSTRATION, rather than composing with verbs of speech by feeding them the sort of denotation their non-quotative complements do. Quotative speech reports have a different thematic structure than non-quotative speech reports, and it's not the case that for any quotative speech report, there is an equivalent non-quotative one. §2.3 gives a formal implementation of the Double-Davidsonian account of quotative complements to verbs of speech which will be assumed moving forward. §3 proceeds to analyze quotative uses of rising declaratives as arguments to rogative verbs of speech using the Double-Davidsonian account put forward in this section.

2.1 THE SYNTAX OF QUOTATION

Consider a simple case of quotation (18a), and a corresponding speech report without quotation (18b):

(18)   a. Ayka said, "Polina likes her job."
       b. Ayka that that Polina likes her job.

The quotation in (18a) looks like an ordinary sentence of English. In fact, it looks like it has the exact same syntax and semantics as the ordinary embedded clause in (18b), modulo the presence of the overt complementizer *that*. This might make it appealing to say that these two sentences in fact have a nearly identical structure—the quotation in (18a) is assigned the same structural representation as the embedded clause in (18b). Call such a theory, on which quotations are ordinary syntactic constituents, with the same structural representation within the sentence containing them that they would be assigned if they were not quotations, a CONSTITUENT THEORY of quotation (e.g. Rabern 2023; see citations therein for further review of the literature). On a constituent theory of quotation, the structure assigned to *say* and its quotative complement in (18a) looks like this, abstracting away from irrelevant complexity:

(19)   Constituent-theoretic structure for (18a) [*to be rejected*]:

say
QUOTE
Polina
likes
her   job
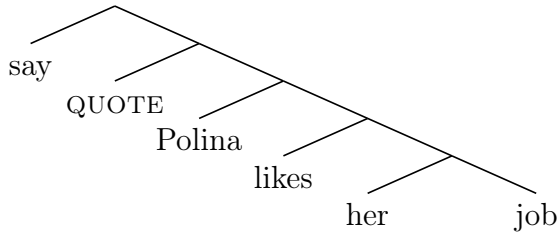
On a constituent-theoretic syntax for quotation, (18a) differs from (18b) only in that it contains a covert quotative complementizer, QUOTE, instead of the ordinary declarative complementizer *that*. There is more to say to flesh out a constituent theory of quotation—specification of the semantics of the QUOTE complementizer; explanation of why quotations display root-clause phenomena like subject-auxiliary inversion in interrogatives; explanation of why quotations do not participate in syntactic or semantic dependencies with the sentences that contain them, like movement, binding and NPI licensing, instead allowing only those anaphoric dependencies that can be established to a completely separate utterance (Partee 1973, Cappelen & Lepore 2007 D1 & D2); and so on. All of those problems can be solved, and I don't linger on them here because constituent theories of quotation are empirically unsustainable for clear reasons that are orthogonal to them.

The central prediction made by a constituent theory of quotation is that quotations must be constituents. And quotations need not be constituents. So constituent theories of quotation are false.

Rather than being restricted to constituents, it seems that the correct generalization about quotations is *anything that can be uttered can be quoted*. Interpret *uttered* in the broadest possible way, perhaps as *produced via vocalization*.[7] All kinds of things can be uttered that do not correspond to constituents. Things can be uttered that do not correspond to *individual* tree structures; that do not correspond to grammatical expressions of the language in which the speech report is expressed; that do not correspond to grammatical expressions in any language; or that do not even make use of the phonological building blocks from which linguistic expressions of *any* spoken language are built (Clark & Gerrig 1990). And all of these expressions can be quoted. All kinds of factors are relevant to determining the identity of a vocalization that are not relevant to determining the identity (and semantic interpretation) of a syntactic structure: global pitch range, rate of speech, tone of voice, and even accompanying facial expressions or non-conventionalized gestures (Clark & Gerrig 1990, Davidson 2015). And yet these factors have truth-conditional effects on the contribution of quotations to speech reports containing them. Quotations can contain *less* than what defines a syntactic constituent and determines its semantic interpretation, and they can also contain *more*. So a theory that treats them as ordinary syntactic constituents is woefully empirically inadequate.

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[7]Note that even this generalization is not broad enough—it is true only of quotative complements to verbs of speech, in spoken languages. In non-spoken languages, obviously quotations need not correspond to vocalizations. And even in spoken languages, all kinds of non-uttered (e.g. purely gestural) things can be 'quoted' as arguments to more semantically bleached predicates like *be like*. See (Davidson 2015) for extensive discussion of both.

The rest of this section substantiates the claims made in the above paragraph. In what follows, we'll need to consider paralinguistic information about how an utterance is produced, and we'll need to consider descriptions of performances that have no conventional orthographic representation. I adopt the notational conventions of indicating the former with lowercase description in square brackets prior to the quotation described, and indicating the latter with lowercase description between asterisks. The following examples demonstrate these notational conventions:

(20)   a. Ayka said, [rapidly, with perfectly monotonic intonation] "I am a robot how can I help you"

b. Ayka said, *emits a guttural howl of inarticulate rage*

c. Ayka said, "Make sure you submit your homeworks by..." *pauses, flashes a smile, shrugs* "any time next week, I guess."

2.1.1 QUOTATIONS CAN CONTAIN MATERIAL NOT ALLOWED IN EMBEDDED CLAUSES

Our first observation is that quotative complements to verbs of speech can contain anything that a matrix clause can contain, including things which ordinarily cannot occur in embedded clauses. It has already been mentioned above, and is widely known, that quotative interrogatives display subject-auxiliary inversion even in dialects that ordinarily do not allow inversion in embedded interrogative clauses:

(21)   a. Ayka said, "Who did you meet?"

b. Ayka said who you met.

c. *Ayka said who did you meet.

Note that there are also interpretational distinctions between the two sorts of embedded interrogatives: the quotation is interpreted as Ayka performing an asking (21a), whereas the ordinary embedded clause is interpreted as Ayka making an assertion that answers the question (21b). We'll return to this semantic distinction in §2.2.

What is less often noted is that quotations can also contain other things ordinarily restricted to matrix clauses. One example especially germane to this paper is the fact that quotations can contain utterance-level intonational tunes, as in embedded rising declaratives:

(22)   Ayka said, "Polina likes her job?"

This is a striking fact because intonational tunes like the L* H-H% tune that defines rising declaratives are utterance-level phenomena. Recall the discussion at the beginning of §1: these 'terminal contours' are intonational phenomena at the prosodic level of the intonational phrase (IP), and IPs are typically assumed to be the maximal prosodic category, containing full sentences (including their embedded clauses). That is to say, given contemporary assumptions about the syntax-prosody-intonation interface it should be strictly impossible to "embed" an intonational tune (Jun 2022). The fact that utterance-level intonational tunes

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are embeddable under quotation is in itself strong evidence that quotations are fully syntactically independent from the sentences that make reference to them, rather than being assigned the same syntactic representation as a ordinary embedded clause.

There are ellipsis phenomena that are ordinarily restricted to matrix clauses, like Left-Edge Ellipsis, or 'diary drop' (Zwicky & Pullum 1983, Fitzpatrick 2006, Weir 2012, 2016):

(23) a. (Have you) seen the new *Star Wars*?   (Weir 2016 ex.1a)
      b. I'm asking you whether *(you have) seen the new *Star Wars*.

Subject + auxiliary sequences (or sometimes just subjects) can be dropped from the left edge of matrix clauses in casual speech (23a), but cannot be dropped from the left edge of embedded clauses (23b). This is unlike ordinary syntactic ellipsis processes like sluicing or verb phrase ellipsis, which occur perfectly happily in embedded environments. This has motivated analyses of left-edge ellipsis as a process whose domain of application is phonologically defined—the left edge of a full sentence—rather than syntactically defined—a constituent bearing a particular label. Though it ordinarily can't occur in embedded clauses, which don't occur at the left edge of the sentences containing them, left-edge ellipsis is fine in quotations:

(24) Ayka said, "Seen the new *Star Wars*?"

Finally, quotations can also include purportedly matrix-level phenomena like discourse particles (25), sentential adverbs (26), and vocatives (27). I say 'purportedly' because discourse particles and sentential adjectives are marginally acceptable in ordinary embedded clauses, making their acceptability in quotations less instructive; the vocative facts are the clearest.

(25) a. Ayka said, "Oh, I didn't know that!"
      b. ??Ayka said that, oh, she didn't know that.
(26) a. Ayka said, "Frankly, I didn't know that!"
      b. ??Ayka said that, frankly, she didn't know that.
(27) a. Ayka said, "Hey Polina, I didn't know that!"
      b. *Ayka said that, hey Polina, she didn't know that.

The generalization about matrix-level phenomena and quotation is that anything that can occur in a matrix clause can occur in a quotative complement to a verb of speech, no matter how strongly it is restricted to matrix contexts outside of quotation, and, indeed, no matter how strongly our understanding of things like the syntax-prosody-intonation interface suggests that it should be strictly impossible for that phenomenon to ever occur in embedded clauses. This makes perfect sense if quotations are syntactically independent of the sentences that make reference to them, but is difficult to square with the idea that quotative complements are assigned the same kind of representation as ordinary embedded clauses.

2.1.2 QUOTATIONS CAN CONTAIN MULTIPLE INDEPENDENT SENTENCES

One clear prediction of a constituent theory of quotation is that a quotation should have to be a constituent, with emphasis on 'a'. But quotations can contain multiple syntactically independent constituents. Consider this variation on the vocative quotation in (27a):

(28) Ayka said, "Hey Polina! Hey! Polina! Yes, you, hi! Wanna come to the party tonight?"

Quotations like this seem to contain several distinct attention-getting utterances that are not plausibly syntactically incorporated into the complete sentence that is eventually uttered.[8] But we need not rely on judgments about plausible representations. Quotations can contain sequences of complete sentences that are manifestly syntactically independent:

(29) Ayka said, "There's a package on my desk, in a red box. Wait until midnight, then carry it to the Hennepin Avenue Bridge. Make sure nobody is watching you, then drop the box into the river."

A particularly extreme example of this is Barth (1969), which is comprised almost entirely of a 35-page quotative complement to the verb *say*, which itself contains a story about somebody telling a story about somebody telling a story about. . . which gets complicated enough that the reader can only tell which recursive story-layer they're currently in by tracking the number of quotation marks at the start of each paragraph. (See also Cappelen & Lepore 2007 D10) It would be absurd to argue that such a quotation is assigned a single tree structure with a single root node.

Recall the constituent-theoretic representation in (19). It requires that a quotation be assigned a constituent structure containing a single root node, because the quotation must be able to be an argument to a quotative complementizer. But as we've just seen, there are perfectly acceptable quotations, involving perfectly grammatical syntactic constituents, which nonetheless do not fall under a *single* root node.[9]

2.1.3 QUOTATIONS CAN CONTAIN UNGRAMMATICAL EXPRESSIONS

A constituent theory of quotation requires that quotations be assigned representations that can be generated by the grammar of the sentence that embeds them. But quotations need not be grammatical (Cappelen & Lepore 2007 D6).

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[8] One particularly strong reason to think they're not syntactically incorporated is that left-edge ellipsis is licensed!

[9] One might respond to this observation by developing a theory on which each of the sentences within quotation marks in examples like (29) is associated with its own quotative complementizer, all of which interact with the verb *say* as stacked modifiers. There are semantic problems that would need to be worked out for such a proposal to be feasible (i.e., standard accounts of stacked modifiers assign them an order-insensitive semantics, which would not work here), and it's not obvious how it could handle recursive quotations like Barth's (1969), which are unproblematic for the double-Davidsonian account endorsed in this paper. But trying to work out the details of how such a proposal could solve these problems would be a waste of time. We'll see below that the problems for a constituent theory get worse.

Quotations can report utterances that are not grammatical in the speaker's own dialect:

(30) Ayka said, "My car needs washed," which I learned about in my dialectology class but I'd never heard before.

One might say that the person making this speech report is aware of the features of Ayka's dialect, and is thus able to assign it a syntactic representation by code-switching at the quotation boundary into a grammar that assigns it a well-formed representation. But that solution won't work in general, because quotations can report utterances in languages that the speaker doesn't know how to parse the syntactic structure of:

(31) Ayka said, "Kuv nyeem ib phau ntawv," but I have no idea what that means.

In fact, someone who describes an utterance in a language they don't speak need not even know where the morpheme boundaries fall in the phonemic string they're reporting:

(32) Ayka said, "Mojrodenkraj", which I think is three words, but as far as I know it might be two.

Quotations can also contain ungrammatical expressions produced by error, which are recognized as ungrammatical by their own utterer:

(33) Ayka said, "I had a dream man green about," then cracked up and said, "Wow that bowl of word salad means I should probably go back to sleep."

Finally, and perhaps most compellingly, quotations can be ungrammatical fragments that do not correspond to well-formed constituents. Some fragments are grammatical, as in fragment answers to questions:

(34) **A**yka: Where were you last weekend?
      Polina: In Edinburgh.

These fragments are invariably phrasal constituents, and are typically analyzed as derived from ordinary syntactic processes (Merchant 2004). But no such syntactic requirements are applied to fragmentary quotations, which need not correspond to grammatical constituents:

(35) Ayka said, "Frankly, I think that I—" but was hit by a car before she could finish her thought.

There is no grammatical syntactic representation that can be assigned to "I think that I". It is not a constituent.

A variety of converging sources of evidence show that the crucial prediction of a constituent theory of quotation—that quotations must be constituents—is false.

2.1.4 QUOTATIONS CAN CONTAIN GIBBERISH AND NOISE

We saw in the above subsection that quotations need not correspond to grammatical constituents. But all of the examples we encountered were, at the very least, utterances of strings of phonemes that correspond to morphemes in some language or another. Even that restriction is too strong. Quotations need not even meet the standard of containing linguistic material (q.v. Clark & Gerrig 1990 §4.5, Cappelen & Lepore 2007 D4).

Quotations can contain expressions that do not correspond to morphemes. For instance, random strings of characters which are assigned no semantic representation can be quoted:

(36)   I asked Ayka for the wifi password, and she said "x23l&$8o".

One might object that at least this quotation involves the pronunciation of letters, numbers, and characters that are assigned names making use of ordinary English phonemes. But quotations can also be comprised of non-phonemic noise:

(37)   a. I asked Ayka how she felt about the faculty meeting, and she said, *emits guttural howl of frustration*
       b. I'm worried about my kid, she's going through a very long phase of pretending to be a snake. Last night I asked her what she wants for dinner, and she would only say *hisses loudly*

Not only do quotations need not correspond to constituents, they need not be built out of the phonological building blocks that language makes available for the construction of linguistic expressions.

2.1.5 QUOTATIONS CAN CONTAIN PARALINGUISTIC INFORMATION

We've already seen that quotations are able to contain anything that full sentences can contain; that they can contain multiple independent constituents; and yet they don't need to contain constituents at all, or even phonemes. But there's an important sense in which quotations can contain *more* than ordinary sentences can contain. Quotations can contain information that is not carried by syntactic structures or their semantic interpretation (q.v. Clark & Gerrig 1990 §4.1). And that information, which cannot be derived from an ordinary syntactic representation, becomes truth-conditional when a quotation is embedded under a verb of speech (Davidson 2015).

First, consider paralinguistic information like global pitch range (as opposed to the local pitch movements that constitute intonational tunes), rate of speech, and tone of voice. These paralinguistic features are properties of any utterance at all, and to every utterance they contribute information of a kind: about the mood and attitude of the speaker, or about properties of the speech setting (e.g. formal vs. informal) and so on. But they do not contribute truth-conditional information under ordinary circumstances: a sentence's truth conditions are not affected by whether the speaker's voice is high or low, whether they speak fast or slow, or whether they sound irritated or calm. But in quotative complements to speech reports, it's a different story:

(38)   a. Eeyore said, [slowly and morosely, in a deep voice] "It's all for naught."
       b. Eeyore said, [quickly and cheerfully, in a high-pitched voice] "It's all for naught."

These two sentences differ only in paralinguistic information, which ordinarily has no truth-conditional ramifications. But in the context of quotative complements to verbs of speech, that paralinguistic information causes a truth-conditional distinction: (38a) is true, and (38b) is false.

This goes for other varieties of paralinguistic information, like gestures, body language, and facial expressions:

(39)   a. I asked Ayka where she was on the night of the murder. She said, [hunched over, glancing from side to side, frowning] "I was at the gym."
       b. I asked Ayka where she was on the night of the murder. She said, [sits up straight, holds eye contact, grins] "I was at the gym."

Conspicuous shifts in body language or accompanying gestures or facial expressions likewise take on truth-conditional import in the context of quotative complements to verbs of speech. Quotations can contain paralinguistic information that is not part of the syntactic representations of sentences or of their semantic interpretation; as such, they cannot be reduced to ordinary syntactic representations.

2.1.6   TAKEAWAY

Constituent theories of quotation predict that quotations must be constituents. That generalization is false. The true generalization is that anything that can be uttered can be quoted. Not all utterances correspond to constituents. And properties of utterances not related to their syntactic representation, or its semantic interpretation, are truth-conditionally relevant to the interpretation of quotative complements to verbs of speech. Therefore quotations are not constituents (in the sense of a constituency theory of quotation; see (19)).

Rather, quotations are PERFORMANCES (Clark & Gerrig 1990)—fully independent utterances, complete with paralinguistic information like global pitch range, rate of speech, tone of voice, and accompanying facial expressions and gestures. These performances stand in a relation of DEMONSTRATION to a speech event (Clark & Gerrig 1990, Davidson 2015; see §2.2), just as, to borrow an example from Clark & Gerrig (1990), miming a tennis serve is a performance that demonstrates a tennis-serving event. Quotations aren't fundamentally different in kind from tennis serves; they seem languagier just because they're performances that demonstrate speech events.

Performances are not linguistic objects, and can't be assigned structural representations. So they are not part of the syntactic representation of speech reports that make reference to them. What *is* part of the syntactic representation of those speech reports is a covert demonstrative proform (Davidson 1979) that *refers to* a performance that is paratactically

associated with it by virtue of being produced cotemporaneously with it.[10] That is the structural representation for quotative complements to verbs of speech that I will assume moving forward. See §2.3 for the implementational details.

To some, it may seem extremely radical to say about cases like (18a) that something that so clearly corresponds to a grammatical utterance is not assigned a syntactic representation within the speech report that makes reference to it. Are we really forced to make such a radical proposal for ordinary-looking quotations, just because of all the weird junk we've seen in this section? My response is that the Double-Davidsonian account of quotation is not actually radical at all. We know that demonstratives can refer to *things that happen in the world*. If my friend makes a half-court shot, I can say *That was awesome!*, and it would be absurd to say that my friend's half-court shot must be a linguistic object in a syntax tree in order to be referred to by the demonstrative *that*. We know that overt demonstratives can be used to refer to quotations: *Uncle Ben said this: "with great power comes great responsibility."* And we know that purely nonlinguistic performances can be "embedded" under predicates without overt demonstratives: *He {was like, went} *sloppy flailing karate gestures** (Davidson 2015). If you accept those three facts, you've already accepted all of the tools made use of in the Double-Davidsonian analysis. The proposal that quotative complements to verbs of speech involve covert demonstrative reference to a performance doesn't require that you buy anything beyond the claim that quotations can be demonstratively referred to, that demonstratives can refer to things that aren't linguistic objects that they share a tree with, and that performances can be embedded without overt demonstratives, all of which are independently motivated.

A final note on the proposal that quotations are not part of the syntactic representation of the speech reports that refer to them, but rather are independent performances that speech reports make demonstrative reference to. If the performance itself is absent from the syntactic representation of the speech report that refers to it, and merely needs to be paratactically associated via cotemporaneity, this predicts that it should be possible to "embed" quotations performed by other people. This prediction is borne out:

(40) [*Context: Ayka and Polina are telling a story about a conversation they had yesterday.*]
      Ayka: And then Polina said   , which really cracked me up
      Polina: Pobody's nerfect!

(41) [*Context: a TV presenter is reporting on a recent political controversy.*]

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[10]Note that I'm not taking on Davidson's (1979) account wholesale, only the proposal that quotations are incorporated into speech reports via a demonstrative proform, and are not constituents of the sentences that make reference to them. I differ from Davidson both with respect to what kind of things quotations refer to (performances, not linguistic expressions), and how those referents are incorporated into the semantic representations of speech reports (via a relation of demonstration between events and performances, not a relation of tokening between types and tokens; see §2.2). The latter semantic claim is restricted to the analysis of quotative complements to verbs of speech, and is not intended as a general claim about how all quotations of any sort are incorporated into semantic representations. The full landscape of quotations, including mixed quotation, seems clearly to involve heterogenous mechanisms for incorporating quotations into semantic representations. See Cappelen & Lepore (2007) for extremely charitable discussion of problems for Davidson's (1979) account as stated.

At the press conference the candidate said, *plays a clip of the candidate saying "private property should be abolished"*, which has been widely taken as ruining her chances at reelection.

Note that in such cases, it's natural for the speaker to direct a deictic gesture toward the producer of the quotation, offering further support for a demonstrative theory of quotation.

And a final empirical observation: it's not the case that anything goes in quotative complementation. The generalization really is that *anything that can be uttered can be quoted*. If a performance doesn't have a vocal component, than it's infelicitous under *say*:

(42)   a. # Ayka said, *performs enthusiastic karate gestures*
        b. # Ayka said, *runs in place for six seconds*

These kinds of performances can be embedded under other predicates, like *go* or *be like* (Davidson 2015), but only performances with a vocal component can be embedded under *say*.[11]

2.2 THE SEMANTICS OF QUOTATIVE COMPLEMENTS TO VERBS OF SPEECH

The previous subsection motivates a syntactic representation for quotative complements to verbs of speech on which the quoted expression is not assigned an ordinary syntactic representation within the speech report that makes reference to it. The only thing corresponding to the quotation that is syntactically represented within that speech report is a demonstrative proform that refers to a performance accompanying the sentence containing it.

This structural representation alone does not preclude the possibility that quotations interact compositionally with verbs of speech in much the same way as ordinary embedded clauses. It doesn't rule out the possibility that the performance that is demonstratively referred to is mapped onto an ordinary semantic representation, which is then compositionally fed to the verb in the same way that a ordinary embedded clause feeds its denotation to the verb—a more round-about route to the same destination.

In fact, there's strong reason to believe that sometimes quotations *do* feed ordinary semantic values into the compositional semantics; in cases of MIXED QUOTATION the content of a quoted expression appears to interact compositionally with the rest of the sentence in the way it would if not quoted:

(43)   When she's in America, Ayka orders "[eɪ]pricots", but when she's in the UK, Ayka orders "[æ]pricots".   (example modeled on Potts 2007)

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[11]This only holds, of course, if we restrict our attention to spoken languages. "Vocalization" is obviously not the basic building block of linguistic expressions in non-spoken languages. See Davidson (2015) for discussion of how these factors shake out in signed languages.

In mixed quotation, what is quoted supplies ordinarily non-truth-conditional information, like pronunciation choices, but also must provide an ordinary semantic value to the compositional semantics in order to derive the truth conditions of the sentence. This motivates analyses of mixed quotation in which a performance, containing information that is not a part of ordinary syntactico-semantic representations, is mapped onto the denotation of the expression uttered in the course of the performance, which is fed into ordinary semantic composition in the ordinary way (Potts 2007, Shan 2010, Maier 2014). These accounts are all perfectly compatible with a performance + demonstrative account of the syntactic representation of quotative complements to verbs of speech. On such an account, the demonstrative introduces the performance it refers to into the compositional semantics; that performance can then be the argument to a disquotation operator that maps it to the denotation of the expression uttered in the performance. And that denotation could then interact compositionally with the verb of speech in exactly the same way that an ordinary embedded clause's denotation does.

I won't flesh out the details of a proposal alone these lines; see the proposals cited above for implementational details. Despite facing no conceptual problems, any such proposal about quotative complements to verbs of speech in particular is not empirically adequate. As a matter of empirical fact, quotative complements to verbs of speech do not interact with them compositionally in the same way that ordinary embedded clauses do.

2.2.1   The semantics of ordinary clausal complements

It's typical to analyze the compositional contribution of ordinary embedded clauses to *say*-reports like so: the embedded clause denotes a proposition. That propositional denotation is then related to the *say*-report by specifying the asserted content of the saying event.[12] In a primitive relational semantics (e.g. Lahiri 2002), *say* simply denotes a relation between an entity and a proposition that that entity asserted. In a classic Hintikka semantics (1962), *say* is a necessity modal construction; the verb introduces universal quantification over worlds compatible with what was asserted, and the embedded clause specifies a proposition that is true in every such world. In a neo-Davidsonian event semantics, a speech event can instead be related to that propositional denotation by a relation of CONTENT (Hacquard 2010). This is sometimes argued to be mediated by an often-covert 'content nominal'; on such views the CONTENT relation relates the proposition denoted by the embedded clause to an entity

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[12]Note that 'asserted content' does seem to be the right way to understand what is meant by 'content' in the domain of speech reports. Crucially, speech reports involving ordinary embedded clauses are *not* interpreted as giving the denotation of the sentence that was uttered in the speech event, but rather identify the proposition that was asserted. A clear example of this is speech reports of sentences that generate implicatures:

(1)   [*Context: Earlier, Ayka said, "John has started reading War and Peace." Polina is interested in whether John has finished the book yet. Someone who observed Ayka's utterance can say, with all sincerity:*]
      Ayka said that he hasn't finished it yet.

This is not part of the literal semantic content of the sentence Ayka uttered. But it is a perfectly faithful report of an entailment of the asserted content of her sentence, which generates the implicature that John has not finished the book.

denoted by the nominal, rather than to the speech event introduced by the verb (Kratzer 2006, Moulton 2009). Here's a schematic representation of the semantics of *Ayka said that p* on each type of analysis; by "-style" I indicate that I've adapted the representation so as to simplify away from all sources of complexity that are irrelevant for our purposes.[13]

(44)   a.   Primitive relational semantics for speech reports
           SAY(a,p)

       b.   Hintikka-style semantics for speech reports
           $\forall w(\text{SAY}(\text{a},w) \rightarrow p(w))$

       c.   Hacquard-style semantics for speech reports
           $\exists e(\text{SAY}(e) \wedge \text{AGENT}(e,\text{a}) \wedge \text{CONTENT}(e,p))$

       d.   Kratzer/Moulton-style semantics for speech reports
           $\exists e \exists x(\text{SAY}(e,x) \wedge \text{AGENT}(e,\text{a}) \wedge \text{CONTENT}(x,p))$

The point I'm making by bringing up these heterogenous accounts is not about how they vary, but about what unifies them. What all these proposals about the semantic representation of *say*-reports, and the role played in that representation by the denotation of the embedded clause, have in common is that they require that the embedded clause denote a proposition, and that that proposition specify the content asserted in the course of the saying event. In a primitive relational semantics (44a), the content relation is simply baked into the predicate: it relates entities to propositions that they've asserted. In a Hintikka-style semantics (44b), the verb contributes a relation between entities and the worlds compatible with what they asserted; the embedded clause specifies (an entailment of) what was asserted. In a Hacquard-style semantics (44c), the denotation of the embedded clause is incorporated into the semantic representation of the speech report by way of a CONTENT relation that relates events to propositions. And in a Kratzer/Moulton-style semantics (44d), the denotation of the embedded clause is incorporated into the semantic representation of the speech report by way of a CONTENT relation that relates 'contentful' entities to propositions. The crucial core underlying all these proposals is that ordinary embedded clauses under *say* contribute a propositional denotation that specifies the asserted content of the saying.

One important motivation for the crucial features underlying all of the above semantic proposals comes from a classic observation that embedded interrogatives entail suitably conditionalized embedded declaratives (Hintikka 1962, Karttunen 1977). First, observe that (ordinary) embedded interrogatives function as reports of assertions, not reports of askings:

(45)   Ayka said whether Polina likes her job.

This sentence means that Ayka *asserted* something, namely, the answer to the embedded interrogative. The Hintikka/Karttunen observation is that sentences like this are logically equivalent to suitably conditionalized declaratives. That is to say, (45) is logically equivalent to (46):

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[13]Throughout the paper, I represent logical predicates with SMALLCAPS in formulas.

(46)   If Polina likes her job, Ayka said that Polina likes her job; and if Polina does not like her job, Ayka said that Polina does not like her job.

In other words, ordinary embedded interrogatives under verbs of speech seem to supply a *propositional* denotation to the verb of speech, *not* a question denotation. They describe events in which the subject asserts a proposition—whichever proposition is the answer to the question denoted by the embedded interrogative. This follows from the standard analysis of how ordinary embedded clauses compose with *say*, regardless of the implementational variants discussed above: the embedded clause must specify a proposition that gives the asserted content of the saying event, and so if the embedded clause is interrogative, it still needs to be related to a proposition somehow or another. This is typically accomplished by proposing that interrogatives are mapped onto one of their answers in order to interact with embedding verbs that need to compose with a proposition (Karttunen 1977, Heim 1994, Dayal 1994; see Dayal 2016 §2.2 for discussion). The implementational details of how that mapping works are beside the point here. The point is empirical: every ordinary embedded clause under *say* contributes to the semantic representation of the speech report by specifying the asserted content of a saying event.

If quotative complements compose with verbs of speech in the same way that ordinary clausal complements do, that means that they must compose with *say* by contributing a propositional denotation that specifies the asserted content of a saying event. It would follow that a saying event can be described using a quotative complement iff it can be described using an ordinary clausal complement; any quotative *say*-report should be equivalent to some ordinary *say*-report. Lahiri (2002) proposes that exactly this relation obtains between quotative and ordinary complements to verbs of speech; he proposes that verbs of speech come in a quotation-embedding variety involving a relation between entities and quotations (47a) and an ordinary-clause-embedding variety involving a relation between entities and propositions (47b) whose semantic representations are related to each other via a meaning postulate ensuring that any quotative speech report has a logically equivalent ordinary speech report (47c). I'll use the variable u (for utterance) to range over quotations; see §1.3.

(47)   a. $[\![say_1]\!] = \lambda u.\lambda x.\text{SAY}_1(x,u)$ (adapted from Lahiri 2002 §6.4.5 exx.96-98)[14]
       b. $[\![say_2]\!] = \lambda p.\lambda x.\text{SAY}_2(x,p)$
       c. $\text{SAY}_1(x,u) \leftrightarrow \exists p([\![u]\!] = p \wedge \text{SAY}_2(x,p))$

As attractive as this proposal is, it won't work. We've already seen that ordinary clausal complements to *say* must contribute a propositional denotation; that proposition specifies the asserted content of the saying event. Lahiri's generalization predicts that the same must hold for quotative complements to *say*: they must be mapped onto propositions, and those propositions must specify asserted content. Neither part of that generalization is true: quotative complements need not be mapped onto propositions, and quotative *say*-reports, unlike ordinary *say*-reports, need not describe assertions.

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[14]Lahiri's proposal is for interrogative embedding under *ask*; I've generalized it here to declarative embedding under *say*.

2.2.2 Quotative complements need not describe assertions

Consider a minimal pair with (45):

(48) Ayka said, "Does Polina like her job?"

There's a stark contrast between (45) and (48). Whereas the ordinary embedded interrogative in (45) is interpreted as describing an assertion despite its interrogative form—an assertion of an answer to the question—the quotative complement in (48) is interpreted as describing an asking—an asking carried out by uttering a matrix interrogative clause. The way that ordinary embedded clauses compose with verbs of speech—by specifying the asserted content of a speech event—is manifestly not the way that quotative complements compose with verbs of speech. A quotative complement simply specifies *what was uttered* in a speech event, not what the asserted content of that speech event was. In fact, as (48) shows, speech reports involving quotative complements do not even have to be reports of speech events in which any assertion at all was made, in contrast with speech reports with ordinary embedded clauses. To put it more formally, comparing (45) and (48) shows that ordinary speech reports and quotative speech reports can't be as closely related as Lahiri's meaning postulate (47c) would have it: there is no ordinary *say*-report corresponding to the quotative *say*-report in (48). It cannot be accurately paraphrased as *Ayka said that p* for any *p* whatsoever. It is not the case that for every quotative *say*-report there is a corresponding ordinary *say*-report. This follows if quotative complements compose with speech reports differently than ordinary complements do—by way of a relation of DEMONSTRATION that relates events to PERFORMANCES, rather than by way of a relation of asserted content that takes a propositional argument. If quotative speech reports have a different thematic structure than ordinary speech reports, we no longer make the wrong prediction that every quotative speech report entails the existence of a logically equivalent ordinary speech report.

2.2.3 Quotative complements need not have semantic content

There are further reasons to believe that, as a matter of empirical fact, the set of possible quotative speech reports is a proper superset of the set of possible ordinary speech reports. Some quotative complements are performances of linguistic expressions that don't have propositional content at all (q.v. Clark & Gerrig 1990 §4.4). Recall that, as we saw in §2.1.4, not all quotative complements are performances of linguistic expressions that have any semantic content whatsoever! It's possible for quotative complements to contain only noise or gibberish, to which compositional semantics cannot be applied at all. Recall the wifi example in (36), repeated here:

(49) I asked Ayka for the wifi password, and she said "x23l&$8o".

In this case, what Ayka uttered is not an expression to which a syntactico-semantic grammar assigns propositional content. So, again, it's not clear how the quotation could compose with *say* by specifying a proposition that was the asserted content of a saying event. At the very

least, it's not clear how a theory that maps quotations onto the denotation *of the quoted expression* could account for this case.

A skeptical response to that line of argument might be: hey wait a minute! The asserted content of an utterance need not be the denotation of the uttered expression! In (49), Ayka *does* assert a proposition: she asserts that the wifi password is x23l&$8o. So doesn't this just show that we need to be more careful about how we derive the asserted content from the performance? Call this solution, of finding a contextually available proposition to map quotations that lack denotations onto, the pragmatic solution to the problem of non-propositional quotations.

Unfortunately the pragmatic solution doesn't hold water. It's simply not the case that speech reports with quoted gibberish are always amenable to an analysis on which the quoted expression is interpreted as expressing a proposition in context. Consider two small variations on (49):

(50)   a. Ayka has a rare speech disorder where if she doesn't know the answer to a question, she panics and starts reciting characters at random. I asked Ayka for the wifi password, and she said "x23l&$8o". So I asked somebody else instead, and they told me it's "tUrTlEsAlLtHeWaYdOwN".

    b. Ayka has an odd habit of reciting characters at random. It's in response to no stimuli whatsoever, and reflects no information about her internal state. As I walked past her yesterday, she said "x23l&$8o".

These examples show that speech reports with quotative complements are felicitous in contexts where all that is being reported is that a certain vocalization was produced. You can make it as clear as you like that an utterance was not contentful or assertive, and speech reports with quotative complements are still fine. There is no proposition p such that *Ayka said that p* is an accurate description of the scenarios in (50).

Consider a final variation on this theme:

(51)   My five-year-old daughter is obsessed with words that contain onset clusters. Sometimes she just sits there saying, "Sport. Spit. Spell," with a ridiculous grin on her face.

It's not obvious how to map those linguistic expressions onto propositions that could then compose with *say* via a relation of asserted content. And, independent of the compositional issue, it's not obvious that there *is* any propositional content to the reported utterances, or any intent to communicate any information whatsoever. We can use quotative speech reports (but not ordinary speech reports) to describe speaking for the pleasure of articulation alone.

So it just can't be that quotative complements interact compositionally with verbs of speech in the same way as ordinary embedded clauses, which invariably contribute a proposition that specifies asserted content. Quotative speech reports have a different thematic structure than ordinary speech reports. As such, they carry different entailments about the nature of

the reported speech event, and their complements do not face the same semantic restrictions that ordinary complements do.

2.2.4 TAKEAWAY

A successful account of quotative complements to verbs of speech must capture the fact that, unlike ordinary *say*-reports, quotative *say*-reports simply describe events of vocalization, and do not impose a constraint that the quotation correspond to a proposition, or even that those events are events in which a proposition is expressed at all. The performance referred to by a quotative *say*-report stands in a relation of DEMONSTRATION to a saying event (Clark & Gerrig 1990, Davidson 2015), not a relation of asserted content. Quotative *say*-reports can be glossed as: "There was a saying event that went like *this*." It's entirely possible to give a demonstration of a saying event that involved an utterance that denotes a proposition that the speaker asserted by way of making that utterance. But it's entirely possible to give demonstrations of saying events that do not.

Compositionally, then, the performance that quotations involve demonstrative reference to will compose with the verb of speech via a relation of DEMONSTRATION that holds between performances and events, rather than by being related to a proposition that composes with the verb of speech in the same way that ordinary embedded clauses do. Quotative *say*-reports do not include a CONTENT relation in their thematic structure, and, unlike ordinary *say*-reports, do not entail that an assertion was made. The implementational details follow.

2.3 IMPLEMENTING THE ANALYSIS OF QUOTATIVE COMPLEMENTS TO VERBS OF SPEECH

Recall the constituent-theoretic tree in (19), repeated here as (52).

(52)   Constituent-theoretic structure for quotative complements to *say* [*rejected*]:
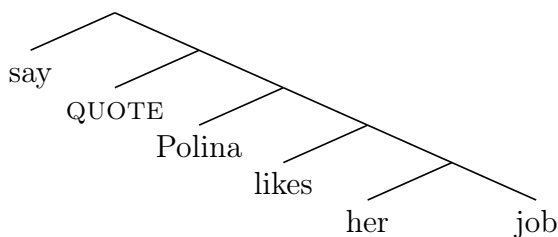
We've seen strong reason to reject this structural analysis in §2.1. Quotations are subject to the generalization *anything that can be uttered can be quoted*, and all kinds of things can be uttered that do not correspond to individual, grammatically-generable syntactic constituents. And properties of quoted utterances that play no role in determining the denotation assigned to a syntactic object by truth-conditional semantics become truth-conditional when quoted. So we can be confident in rejecting constituent-theoretic analyses like (19). We've also seen strong reason in §2.2 to reject accounts of quotative complements to verbs of speech on which they compose with verbs of speech in the same way as their ordinary clausal complements do, and are subject to the same semantic restrictions on what kind of denotation they must

contribute to the semantic representation of the speech report. Ordinary clausal complements to *say* must always contribute a proposition to the compositional semantics, which composes with *say* by specifying the asserted content of the saying event; this is true even of interrogative clauses embedded under *say*, which are interpreted as specifying a question that the saying event asserted an answer to. But quotative interrogative complements to *say* describe asking events carried out by the utterance of the quoted interrogative, not events of asserting an answer to that interrogative; and quotative complements to *say* are acceptable even when the quoted expression has no propositional content at all, and the saying event did not involve an assertion. Sentences in which *say* has an ordinary clausal complement can only describe assertions of propositions; sentences in which *say* has a quotative complement need only describe events of vocalization, whether a proposition is asserted by that vocalization or not.

So we must reject analyses of quotative complements to verbs of speech on which the quotative complement is assigned an ordinary syntactic representation, and analyses on which it composes with the verb of speech in the same way as ordinary clausal complements, or is subject to the same semantic restrictions that are imposed on ordinary clausal complements.

2.3.1 THE DOUBLE-DAVIDSONIAN ANALYSIS OF QUOTATIVE COMPLEMENTS TO VERBS OF SPEECH: THE BASICS

Instead, I'll adopt a Double-Davidsonian analysis of quotative complements to verbs of speech: syntactically, the quotation is a covert demonstrative (Davidson 1979) that makes reference to a paratactically associated cotemporaneous performance; semantically, that performance is related to the speech verb by way of a DEMONSTRATION relation between events and performances (Clark & Gerrig 1990, Davidson 2015). In other words, the structure of embedded quotation looks like so:

(53)   Double-Davidsonian structure for quotative complements:
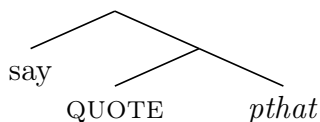
"Embedded" quotation does not involve an ordinary syntactic representation of the quoted expression. Rather, quotative complements contain a covert demonstrative proform, which we'll call *pthat* by analogy to Kaplan's (1989) demonstrative proform *dthat*. The proform *pthat* is so named because it ranges over the domain of PERFORMANCES, which are objects to which I'll assign the semantic type p.[15] I assume that *pthat* is not only restricted in

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[15]If you're worried about multiplying our inventory of semantic types/ontological categories, you could just say that performances are regular old events, that quotations involve demonstrative reference to a paratactically associated cotemporaneous event, and that the DEMONSTRATION relation relates events to other events. Nothing important rests on the choice to give performances a semantic type distinct from events; in the main text I've chosen to specify a type p for performances just for readability, as it's easier to parse the formulas if you can tell at a glance which thing is the performance and which thing is the event that it's a demonstration of.

that it can only refer to things of type p, but is further contextually restricted such that its reference is fixed to the paratactically associated cotemporaneous performance. In contexts where there is such a performance, the reference of *pthat* is fixed to that performance by the context; if there is no such performance, *pthat* fails to refer and anomaly results.

(54) Semantics of the quotative demonstrative *pthat*:
$[\![pthat]\!]^c = p(c)$
Where $p(c)$ is the performance in c that is paratactically associated with *pthat* via cotemporaneity

The performance that *pthat* refers to is related to the verb of speech by way of a relation of DEMONSTRATION between events and performances. In formulas, I will always abbreviate this relation as DEM. This relation is supplied by the quotative complementizer QUOTE:[16]

(55) Semantics of the quotative complementizer QUOTE:
$[\![\text{QUOTE}]\!]^c = \lambda u_p.\lambda e_v.\text{DEM}(e,u)$

Throughout, I use smallcaps to distinguish logical predicates in formulas. Note that I follow the convention of assigning events the type v, and that I've chosen to reserve the variable u for expressions of type p.[17] This is to avoid confusion with the variable p, which is typically used to range over propositions. Mnemonically, I've chosen u because of *utterance*, as we'll be focused on performances of utterances for the purposes of this paper.[18] Read DEM(e,u) as "u is a demonstration of e." The quotative complementizer is type pvt; when it composes with the referent of *pthat* the result will be type vt.[19]

For the purposes of this paper, I won't spend a lot of time handwringing about exactly what it means for an event to stand in a relation of demonstration to a performance; a rough intuition will serve us perfectly well. Interested readers are referred to Clark & Gerrig (1990, §2.3, 4.3) for detailed discussion, of which I give only a précis here. In brief, Clark & Gerrig (1990)

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[16]It's tempting to call QUOTE 'covert', but this may simply reflect a bias toward thinking about phonological realization in terms of segmental material. Quotations are reliably pronounced with an EMPHATIC JUNCTURE a their left edge (Sturman 2019, 2022); it wouldn't be crazy to describe this juncture as the phonological realization of QUOTE.

[17]Note as well that Davidson (2015) refers to the performances themselves as "demonstrations" within her formal analysis; I've used the term "performance" here to clearly disambiguate the performances from the relation that connects them to the events that they're demonstrations of.

[18]It's crucial to note, however, that p is the type of *all* performances, not just utterances—see Davidson (2015) for discussion of the breadth of performances that can embed under *be like*. So the mnemonic usefulness of u is only relative to the purposes of this paper. Only performances of utterances can combine with verbs of speech because only utterances can serve as demonstrations of speech events—if there's no vocal component to the performance, then the set of all speech events demonstrated by that performance is necessarily empty, and anomaly results. See below for further discussion.

[19]I'm using a compact type notation in which functional types are written simply as strings of their input and output types. Input types are assumed to be simple by default, so xyz refers unambiguously to the type of functions from elements of type x to functions from elements of type y to elements of type z. Parentheses are used only to indicate functional input types; $(xy)z$ refers unambiguously to functions from elements of type xy to elements of type z.

discuss how demonstrations of events involve DEPICTIVE aspects, by which a performance mimics the event it demonstrates; SUPPORTIVE aspects, which are not depictive but serve to help get depictive content across, like overenunciation to capture the details of a depicted regional accent; ANNOTATIVE aspects, which provide the performer's own commentary on the event they're demonstrating, like an eyeroll of exasperation at the fact that the person being quoted said something so stupid; and INCIDENTAL aspects, which are properties of the performer's own behavior that are not intended to be depictive of the demonstrated event, as in the case that the performer simply has an unusually loud and low-pitched voice. Understanding exactly how a performance stands in relation to the event it demonstrates is a pragmatically complex process, requiring shared understanding between the interlocutors of which aspects of a performance fit which of those four categories, in particular which aspects of the performance are the depictive ones (comprising "the demonstration proper"), and also which aspects of the demonstrated event are being depicted by those aspects of the performance.

2.3.2 CHOOSING A SEMANTIC REPRESENTATION FOR VERBS OF SPEECH

Finally, the semantics of the verb of speech itself. We've encountered a variety of options for the semantic representation of speech reports in (44), repeated here as (56)

(56) a. Primitive relational semantics for speech reports
          $\text{SAY}(\mathsf{a},p)$

  b. Hintikka-style semantics for speech reports
          $\forall w(\text{SAY}(\mathsf{a},w) \to p(w))$

  c. Hacquard-style semantics for speech reports
          $\exists e(\text{SAY}(e) \land \text{AGENT}(e,\mathsf{a}) \land \text{CONTENT}(e,p))$

  d. Kratzer/Moulton-style semantics for speech reports
          $\exists e \exists x(\text{SAY}(e,x) \land \text{AGENT}(e,\mathsf{a}) \land \text{CONTENT}(x,p))$

The semantic observations motivating our Double-Davidsonian account of quotative complements to verbs of speech (§2.2) militate against the primitive relational semantics (56a) and the Hintikka-style semantics (56b). This is because both accounts treat the verb as contributing a predicate that encodes a notion of content directly: on the primitive relational semantics the SAY predicate relates entities to propositions that they've asserted, and on the Hintikka-style semantics the SAY predicate relates entities to worlds compatible with what they're asserted. Both are incompatible with our observations about quotative complements to *say*, which show that they are not necessarily interpreted as specifying asserted content.[20] So, in keeping with the representations in (56c) and (56d), I'll assume a Parsons-style (1990) neo-Davidsonian event semantics in which verbs of speech introduce predicates of events, which allows for the flexibility of that event relating to different types of objects via different thematic relations: a saying event can be related to a proposition via a CONTENT relation,

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[20]One could introduce ambiguity *à la* Lahiri (2002) and specify two different SAY predicates, one of which combines with propositions, and the other of which combines with quotations, but the meaning postulate that would save such an account from being disqualifyingly *ad hoc* by maintaining a tight implicational relationship between the two predicates is empirically unsustainable; see discussion of (47c) above.

in the case of ordinary clausal complementation, or to a performance via a DEMONSTRATION relation, in the case of quotative complementation.

Specifically, I'll assume Hacquard-style representations (56c) moving forward, for one simple reason. These representations are distinguished from Kratzer/Moulton-style representations (56d) only by whether or not the embedded clause composes with the verb as mediated by a "content nominal". And, as we've seen in §2.2, it can't be that every *say*-report involves a covert content nominal, because quotative *say*-reports do not entail that any content whatsoever was expressed by the saying event. I see no reason to rule out in principle the idea that quotative *say*-reports involve covert nominals of a different sort than ordinary *say*-reports (i.e., non-contentful nominals), but I also see no reason to introduce unnecessary complexity to the analysis.[21] See Uegaki (2023, ch.7) for even-handedly skeptical discussion of nominal mediation as a general strategy for handling the semantics of clausal complementation.

2.3.3 COMPOSITIONAL SEMANTICS FOR VERBS OF SPEECH

As Parsons (1990) notes, a commitment to a neo-Davidsonian semantic representation, like the one I'll adopt here (56c), does not entail a commitment to how that representation is constructed by the compositional semantics. In a neo-Davidsonian event semantics, it's possible to compose the verb with its arguments entirely via predicate modification (Altshuler et al. 2019); for the verb to abstract over arguments to thematic predicates and compose directly with (some of) its arguments (Kratzer 1996); for the verb to abstract over entire predicates of events and take other predicates of events as arguments (Champollion 2015); and so on. Abstraction over arguments to thematic relations, and direct composition with arguments, won't work for us here for a reason that should be familiar at this point: sometimes verbs of speech combine with propositions, and sometimes with performances, so there is no one semantic type that we could assign to them that would allow them to directly combine with their arguments in both cases, and no one thematic relation by which they relate to their arguments that could be built into their denotation. The best we could do on such a view is stipulate ambiguity, which would be disqualifyingly *ad hoc* given that we could enforce no bi-implicational relationship between the two denotations:

(57) Direct composition of verbs of speech with their complements (to be rejected):
    a. $[\![say_1]\!]^c = \lambda p.\lambda e.(\mathrm{SAY}(e) \wedge \mathrm{CONTENT}(e,p))$

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[21]Maier (2020) argues in favor of generalizing the content nominal strategy to quotative complements as a less 'radical' alternative to a full-fledged Double-Davidsonian theory like the one developed here. On that view, clausal complementation in general is mediated by content nominals, and the only difference between ordinary clausal complements and quotative complements is that ordinary clausal complements specify the content of that mediating nominal, whereas quotative complements specify its form (see his §6 for details). But this strategy can't work, because, as we've seen in §2.2, quotative complements to *say* do not entail that the saying event involved content at all, which is the opposite of what is predicted by an account on which they compose with the verb of speech by specifying the form of a *contentful* entity. This objection applies with the same force to the analysis in Maier (2023), which requires quotations to be the form component of a form-content pair, replicating the inaccurate prediction of Lahiri's meaning postulate (47c; cf. Maier 2023 ex.30). Interestingly, Maier (2023) entertains the possibility of a less-unified account of ordinary and quotative complements that lacks this property (see his ex.25) before discarding it for broadly Lahirian reasons.

b. $[\![say_2]\!]^c = \lambda u.\lambda e.(\text{SAY}(e) \wedge \text{DEM}(e,u))$

Instead, I'll take the simplest compositional strategy that allows for a unified account of ordinary and quotative complements: verbs of speech simply denote one-place predicates of events, and that's it.[22] Here's the simple verbal denotation that I'll assume:

(58) $[\![say]\!]^c = \lambda e.\text{SAY}(e)$

The verb *say* simply denotes the set of all saying events.[23] I assume that an event is a saying event iff it's an event of vocalization,[24] that being the lexical semantics suggested by our empirical investigation in the first two parts of this section.[25] This lexical semantics can be enforced by the following meaning postulate:

(59) $\forall e(\text{SAY}(e) \leftrightarrow \forall u(\text{DEM}(e,u) \rightarrow \text{VOCAL}(u)))$
Where the extension of VOCAL is the set of all performances with a vocal component

This meaning postulate defines the lexical semantics of *say* by way of a bi-implicational relation between the predicate SAY and possible demonstrations of events. If an event is in the extension of SAY, then it can only be demonstrated by performances with a vocal component. And if all possible demonstrations of an event are made by way of performances with a vocal component, then it's a saying event.

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[22]Note that nothing crucial hinges on the distinction between this and a higher-order Champollion-style (2015) compositional semantics where verbs abstract over entire predicates of events; a Champollion-style semantics gives a different compositional pathway to the exact same representations we're interested in. Champollion takes that more complex pathway in order to capture quantifier scope phenomena that aren't relevant to us here, so I've taken the simpler path.

[23]Throughout the main text I'll slide back and forth between function talk and set talk where equivalent. readers who'd rather only talk about functions are invited to pretend that I wrote "the characteristic function of the set..." wherever appropriate.

[24]Note that this characterization must be stretched to cover cases of "internal saying", as in examples like this:

(1) Look at how Polina is grimacing, she's probably saying, "I wish I could just go home."

I'll assume that cases like this, in which quotations are used to describe a thought that is not overtly vocalized, are cases that rely on a folk theory of thought as mind-internal "vocalization"—"covert self talk" in Geurts's (2018) terms.

[25]Major (2021) argues that some uses of *say* are stative. In such cases, *say* seems to mean something much closer to "express" than "vocalize":

(1) Suspect #2's sweating says that he is guilty. (Major 2021 ex.60b)

These cases receive non-habitual interpretations in the simple present, showing clear evidence of stativity (Dowty 1979). Major (2021) analyzes these cases in terms of a more finely decomposed thematic structure for the verb *say*. We'll see below (§2.2) that there's strong evidence for differences in thematic structure between quotative *say*-reports and ordinary *say*-reports, such that only the latter entail expression of propositional content, whereas the former only entail vocalization. Major's stative cases seem to be cases where *say* entails only expression of propositional content, not vocalization. A fuller analysis of how stative uses of *say* relate to the thematic structures discussed below is outside the scope of this paper.

2.3.4 Putting the pieces together

Consider again the simple example of embedded quotation that began our discussion of the syntax and semantics of quotation, repeated here as (60):

(60)   Ayka said, "Polina likes her job."

Let's call the context of utterance of this sentence c^{60}. Recall that on our Double-Davidsonian account of quotation, the quoted utterance ("Polina likes her job") is not part of the syntactic representation of (60), but rather is a performance paratactically associated with the covert demonstrative *pthat* via cotemporaneity. That is to say, the structure of *say* + "Polina likes her job" in (60) is exactly as shown in (53). But in the context of utterance, *pthat* will be interpreted as referring to the performance comprising the utterance of the sentence *Polina likes her job*:

(61) $[\![pthat]\!]^{c^{60}}$ = "Polina likes her job"

Throughout, when I introduce an expression in quotes into formal semantic composition, that represents a performance comprising the utterance of the quoted expression, not the quoted expression itself *qua* linguistic object. With this in hand, here's how *say* composes with its quotative complement in (60), given the structure in (53):

(62) $\lambda e.(\text{SAY}(e) \wedge \text{DEM}(e,\text{"Polina likes her job"}))$

$\lambda e.\text{SAY}(e)$ $\lambda e.\text{DEM}(e,\text{"Polina likes her job"})$

$\lambda u.\lambda e.\text{DEM}(e,u)$ "Polina likes her job"

Each terminal node has been replaced with its denotation in the context of utterance; the only context-sensitive expression, *pthat*, has been replaced with the performance that paratactically associates with it via cotemporaneity in the context of utterance. Note that the final step in this derivation is accomplished via predicate modification, as the two semantic objects that must be composed at that point in the derivation are both type vt. The result is an expression of type vt that conjoins the predicate of events denoted by the verb with the predicate of events denoted by the quotative complement: say + quotation denotes the set of all saying events (the $\text{SAY}(e)$ conjunct) that are also events that the indicated performance is a demonstration of (the $\text{DEM}(e,\text{"Polina likes her job"})$ conjunct). Informally, we can read the denotation composed in (62) as a function that takes an event e and says of that event: "e is a saying event, and it went like this: 'Polina likes her job.' "

I've only shown how the quotation composes with the verb of speech, and not continued the derivation, because the interaction between the verb and its quotative complement is where all the action is. The predicate of events in (62) will go on to compose with the external argument as mediated by a thematic relation in the same way as that is achieved in any neo-Davidsonian semantics on which the external argument is "severed" from the verb, e.g.

via event identification (Kratzer 1996), in addition to standard existential closure operations familiar from the event semantics literature, to arrive at a representation matching the Hacquard-style template in (56c):

(63)   Final semantic representation for *Ayka said, "Polina likes her job"*:
       $\exists e(\text{SAY}(e) \wedge \text{AGENT}(e,\mathsf{a}) \wedge \text{DEM}(e,\text{"Polina likes her job"}))$

Note that I'm abstracting away from all sources of complexity irrelevant to our purposes, like tense and abstraction over worlds.

I assume that composition of verbs of speech with their ordinary clausal complements is entirely parallel to the compositional path shown for composition with quotative complements, with the only difference being that ordinary clausal complements feed propositions into a CONTENT relation, not a DEMONSTRATION relation (Kratzer 2006, Moulton 2009, Hacquard 2010):

(64) $[\![\textit{that Polina like her job}]\!] = \lambda e.\text{CONTENT}(e,p)$
       Where $[\![\textit{Polina likes her job}]\!] = p$

This then composes with the verb in the same way that quotative complements do, as illustrated in (62), resulting in a final representation like this:

(65)   Semantic representation for *Ayka said that Polina likes her job*:
       $\exists e(\text{SAY}(e) \wedge \text{AGENT}(e,\mathsf{a}) \wedge \text{CONTENT}(e,p))$
       Where $[\![\textit{Polina likes her job}]\!] = p$

The requirement that ordinary clausal complements to *say* denote a proposition (including the generalization that interrogative clausal complements to *say* must be mapped onto a proposition representing an individual answer) follows from the nature of the CONTENT relation as it relates to saying events: the content of a saying event must always be propositional. This aspect of the lexical semantics of *say* can be enforced by the following meaning postulate:

(66)   For any event e, semantic object δ,
       $(\text{SAY}(e) \wedge \text{CONTENT}(e,\delta)) \leftrightarrow \delta \in D_{st}$

A semantic object can only be the content of a saying event if it's in D_{st}, the domain of type st expressions (i.e. propositions). This follows from the proposal that the content of a saying event is *asserted* content, and only propositions can be asserted.

It's worth noting that, on this compositional proposal, verbs of speech compose with complements of type vt, not of a propositional type like st. This is not a novel innovation of this proposal; type vt complementation strategies have been argued for elsewhere, and it appears that there are languages in which it's the default complementation strategy (Driemel & Kouneli to appear).

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2.3.5 Accounting for the facts

There are three empirical desiderata for our semantics of quotative *say*-reports. The first is that there are no restrictions on what can be a quotative complement to *say* other than that it involve vocalization (i.e., *anything that can be uttered can be quoted*). The second is that quotative complements to *say* need not be interpreted as specifying an asserted proposition—they can be interpreted as describing question-askings, or vocalizations to which no propositional content is assigned and by which no propositional content is expressed. The third is that (restricting our attention to spoken languages) performances that have no vocal component are infelicitous when "quoted" under *say*. Our formal implementation explains all three generalizations.

First, the generalization that anything that can be uttered can be quoted. As can be seen in (62), the "quoted" performance is introduced into the compositional process by being plugged in as an argument to the DEMONSTRATION relation; that DEMONSTRATION relation is then conjoined via predicate modification with the predicate of saying events denoted by the verb. The result is simply the intersection of the set of saying events and the set of events demonstrated by the quoted performance—the only requirement that the performance must meet is that it qualify as a demonstration of a saying event. The lexical semantics of *say* is such that being a vocalization is enough to qualify as a saying event (59), so any demonstration involving a vocalization qualifies as a demonstration of a saying event, regardless of whether that vocalization corresponds to a grammatical expression of any dialect of English or of any other language; whether that vocalization includes properly phonemic material at all; or whether that vocalization corresponds to the expression of propositional content. The account correctly predicts that anything that can be uttered can be quoted.

Second, the generalization that when *say* has a quotative complement, it need not be interpreted as describing an asserted proposition. This generalization is captured in much the same way as the previous generalization. On this account, *say* only contributes a predicate of saying events. Any event is a saying event if it's an event in which vocalization is produced (59). There's no ontological requirement that a saying event must be an event in which a proposition is asserted. The reason why ordinary clausal complements to *say* are interpreted as specifying an asserted proposition is because they, unlike quotative complements, compose with *say* as mediated by a CONTENT relation (Kratzer 2006, Moulton 2009, Hacquard 2010). The requirement of proposition-denoting applies only to the thematic structure involved in the meaning postulate in (66), which is not part of the thematic structure of quotative complement constructions.

Third, the generalization that performances with no vocal component are infelicitous when "quoted" under *say*. This generalization is captured in much the same way as the first generalization. Composing the quotative complement with *say* results in the intersection of the set of saying events and the set of events demonstrated by the quoted performance. Consider (42a), repeated here as (67a). I suppress the AGENT thematic relation in the following formulas for readability.

(67) a. # Ayka said, *performs enthusiastic karate gestures*

b. $[\![(67a)]\!]^{c^{67a}} = \exists e(\text{SAY}(e) \wedge \text{DEM}(e, *\text{performs enthusiastic karate gestures}*))$

Because a saying event must be an event of vocalization, a saying event cannot be demonstrated by a performance with no vocal component. So the intersection of the set of saying events and the set of events demonstrated by a non-vocal performance is the empty set. That means that (67a) is assigned a contradictory interpretation: (67b) is necessarily false no matter what the world is like, resulting in infelicity.

More formally, we can give a proof that (67b) is contradictory given the meaning postulate in (59). The proof goes like this:

(68) a. $\forall e(\text{SAY}(e) \leftrightarrow \forall u(\text{DEM}(e,u) \rightarrow \text{VOCAL}(u)))$ (axiom 59)

b. $\neg\text{VOCAL}(*\text{performs enthusiastic karate gestures}*)$ (observation)

c. $\neg\exists e(\text{SAY}(e) \wedge \text{DEM}(e, *\text{performs enthusiastic karate gestures}*))$ (68a, 68b)

It follows from the lexical semantics of SAY as axiomatized in (59), and from the fact that the performance in (67a) is not vocal, that (67b) is necessarily false. The same reasoning goes through for any non-vocal performance under *say*. It's crucial to note that it is not necessary to posit any selectional restriction, either syntactic or semantic, to account for the infelicity of non-vocal performances under *say*; it simply falls out of the condition imposed by the verb that the performance must be a demonstration of a saying event.

2.3.6 MANNER-OF-SPEECH VERBS

This last point is relevant to expanding the frame beyond just the verb *say*. This analysis of *say* gives a template for the syntax and semantics of quotative complements to verbs of speech in general. Consider manner-of-speech verbs like *yell* and *whisper*. I assume that the syntax and compositional semantics works the same for manner-of-speech verbs as it does for *say*. The only difference is the lexical semantics: manner-of-speech verbs like *yell* and *whisper* introduce predicates of events that are not merely events of vocalization, but are events of vocalization *of a particular kind*. This is illustrated by their infelicity when accompanied by performances that do not demonstrate a vocalization performed in the indicated manner:[26]

(69) a. Ayka yelled, "POLINA LIKES HER JOB"

b. #Ayka yelled, [in a hoarse whisper] "Polina likes her job"

(70) a. #Ayka whispered, "POLINA LIKES HER JOB"

b. Ayka whispered, [in a hoarse whisper] "Polina likes her job"

I assume that the denotation provided for *say* in (58) gives a template for all verbs of speech, including manner-of-speech verbs:

(71) a. $[\![\text{yell}]\!]^c = \lambda e.\text{YELL}(e)$

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[26]Note that these facts hold *modulo* inferences about which aspects of the performance are depictive and which are incidental; see discussion above and Clark & Gerrig (1990 §2.3).

b. $[\![\text{whisper}]\!]^c = \lambda e.\text{WHISPER}(e)$

The infelicity of whispery performances under *yell* (69b) simply follows from the fact that an event is a yelling event ($\text{YELL}(e) = 1$) iff it's an event including an extraordinarily loud vocalization, and so the intersection of the set of yelling events that are demonstrated by a whispery vocalization is necessarily empty.

(72) a. $[\![(69a)]\!]^{c^{69a}} = \exists e(\text{YELL}(e) \wedge \text{DEM}(e,\text{``POLINA LIKES HER JOB''}))$
      b. $[\![(69b)]\!]^{c^{??}} = \exists e(\text{YELL}(e) \wedge \text{DEM}(e,[\text{in a hoarse whisper}] \text{ ``Polina likes her job''}))$

In (72a) we see a non-contradictory interpretation: it's in principle possible for there to be yelling events demonstrated by an extraordinarily loud vocalization. In (72b), we see a contradictory interpretation: it's not possible in principle for there to be yelling events demonstrated by whispered vocalizations, explaining the infelicity of (69b).

The same explanation holds for *whisper, mutatis mutandis*: an event is a whispering event ($\text{WHISPER}(e) = 1$) iff it's an event including a whispered vocalization, and so the intersection of the set of whispering events that are demonstrated by a shouted vocalization is necessarily empty, explaining the infelicity of (70a).

2.4 TAKEAWAY

Quotations embedded under verbs of speech are syntactically represented by a covert demonstrative, which refers to a paratactically associated cotemporaneous performance. They compose with verbs of speech as mediated by a DEMONSTRATION relation. Restrictions on what sorts of performances are felicitous when "quoted" under a verb of speech are determined entirely by the conditions that verb imposes on what can be in its extension: to qualify as a saying event an event must be an event of vocalization (59), restricting felicitous quotative complements to those performances involving a vocalization; to qualify as a yelling (or whispering) event an event must involve yelling (or whispering), restricting felicitous quotative complements to those performances involving yelling (or whispering). Crucially, those quotative complements need not meet the semantic requirements imposed on ordinary clausal complements to the same verbs, such as denoting a proposition, and they do not play the same thematic role as ordinary clausal complements to those verbs, such as specifying asserted content.

In the next section, we connect back to quotative rising declaratives under rogative verbs of speech. The argument should already be clear: though ordinary clausal complements to rogative verbs of speech, like *ask*, are subject to a semantic requirement, namely that they denote questions, the only requirement imposed on their quotative complements is that they be demonstrations of asking events. And, just as there are saying events that do not involve proposition-denoting expressions, there are asking events that do not involve question-denoting expressions. Like utterances of rising declaratives. The felicity of rising declaratives as quotative complements to rogative verbs of speech is not evidence that they denote questions; rather, it's part of the larger pattern of quotative complements to

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verbs of speech not being subject to the same semantic restrictions as their ordinary clausal complements.

3 ANALYZING QUOTATIVE USES OF EMBEDDED RISING DECLARATIVES

We've seen above, in §1, that an account of embedded rising declaratives must explain four things. First, RDs can be embedded under antirogative manner-of-speech verbs. Second, RDs cannot be embedded under "assertive" verbs of speech, like *assert* and *claim*. Third, RDs can be embedded under rogative verbs of speech. Finally, RDs cannot be embedded under anything other than verbs of speech, regardless of rogativity. I will take this final generalization for granted: RDs are not embeddable by ordinary means because they are defined by a sentence-level intonational tune that doesn't embed by definition (§2.1.1), so the only way they can show up in embedded contexts is as quotations. And only verbs of speech take quotative complements.

The rest of this section gives an account of the three more substantive generalizations above. But first, as a sanity check, I'll show how RDs interact with *say*, applying the system developed in §2. One of the crucial motivations for the semantics developed above is the fact that, while ordinary interrogative complements to *say* are interpreted as specifying the asserted content of a saying event—content corresponding to an answer to the embedded interrogative—quotative interrogative complements to *say* are interpreted as demonstrating an asking, not as specifying a question to which an answer was asserted. This contrast is illustrated by (45) and (48), repeated here as (73a) and (73b):

(73) a. Ayka said whether Polina was at the party.
      b. Ayka said, "Is Polina at the party?"

Because embedded RDs are stubbornly quotative, and because utterances of RDs comprise askings, the account developed in (2) predicts that their interpretation under *say* should pattern with (73b), not (73a): they should be interpreted as describing an asking carried out by the utterance of the RD, not as describing an assertion. And this is borne out:

(74) a. Ayka said, "Polina is at the party?"
      b. $[\![(74a)]\!]^{c,74a} = \exists e(\text{SAY}(e) \wedge \text{AGENT}(e,\mathsf{a}) \wedge \text{DEM}(e,\text{"Polina is at the party?"}))$

The semantics developed in §2 derives the interpretation for (74a) given in (74b): there was a saying event demonstrated by a performance of the utterance "Polina is at the party?". That utterance comprises an asking, not an assertion, so our semantics predicts that (74a) should be interpreted as describing an asking, not an assertion. And indeed, as a matter of empirical fact, it is. Sanity check: passed.

3.1 Generalization 1: RDs under manner-of-speech verbs

Recall that RDs can be quotative complements to antirogative manner-of-speech verbs (cf. 8):

(75)   Ayka yelled, "POLINA LIKES HER JOB?"

Given the semantics developed in §2, (75) is interpreted like so:

(76) $\llbracket (75) \rrbracket^{c75} = \exists e(\text{YELL}(e) \wedge \text{AGENT}(e,\text{a}) \wedge \text{DEM}(e,\text{"POLINA LIKES HER JOB?"}))$

The extension of the predicate YELL is the set of all events of extraordinarily loud vocalization (§2.3.6); the quotative complement "POLINA LIKES HER JOB?" is a performance involving extraordinarily loud vocalization; so there is no incompatibility between the semantics of the verb and the contribution of the quotative complement. The fact that the verb is antirogative in the restrictions it imposes on its ordinary clausal complements is immaterial due to the fact that quotative complements contribute a different sort of semantic representation that composes via a different thematic structure than ordinary clausal complements do. The only restriction that *yell* places on its quotative complements is that they comprise demonstrations of yelling events, which is a criterion that can be met by RDs regardless of whether one analyzes them as denoting propositions or questions.

3.2 Generalization 2: RDs under assertive verbs of speech

Recall that RDs are infelicitous when embedded under "assertive" verbs of speech, like *assert* or *claim* (4b, repeated as 77):

(77)   # Ayka {asserted, claimed}, "Polina likes her job?"

Given the semantics developed in §2, what explains restrictions on the felicity of embedded quotations is whether or not it is possible for there to be an event that is simultaneously in the extensions of the verbal predicate and the set of events demonstrated by the embedded quotation. The most fundamental observation about RDs, and the *raison d'etre* for the literature investigating their semantics, is that they don't comprise assertions, despite being syntactically declarative. So quotative RDs under assertive verbs of speech are contradictory for the same reason that whispered vocalizations are infelicitous under *yell* (§2.3.6): they cannot in principle serve as demonstrations of asserting events, and so embedding one under *assert* results in an interpretation that is necessarily false regardless of what the world is like:

(78)   a.   # Ayka asserted, "Polina likes her job?"
       b. $\llbracket (78a) \rrbracket^{c78a} = \exists e(\text{ASSERT}(e) \wedge \text{AGENT}(e,\text{a}) \wedge \text{DEM}(e,\text{"Polina likes her job?"}))$

There are no assertion events that are demonstrated by performances of utterances of rising declaratives. So (78b) is necessarily false, explaining the infelicity of (78a). The same reasoning applies to *claim, mutatis mutandis.*

3.3 GENERALIZATION 3: RDS UNDER ROGATIVE VERBS OF SPEECH

Let's first make some assumptions about the semantics of *ask*. I assume that *ask*, like *say*, denotes a one-place predicate of events, which composes with its ordinary clausal complements as mediated by a thematic relation of CONTENT:

(79)   a. $[\![ask]\!] = \lambda e.\text{ASK}(e)$

      b. $[\![\textit{Ayka asked whether Polina likes her job}]\!] = \exists e(\text{ASK}(e) \wedge \text{AGENT}(e,\text{a}) \wedge \text{CON-TENT}(e,q)$
         Where $[\![\textit{whether Polina likes her job}]\!] = q$

The relation of CONTENT relates events to their contents. In the case of asking events, that content is *the content asked about*, not the content asserted, as in the content of saying events. This places a restriction on the content of an asking event, namely that it must be a question. This aspect of the lexical semantics of *ask* can be enforced by the following meaning postulate:

(80)   For any event e, semantic object δ,
      $(\text{ASK}(e) \wedge \text{CONTENT}(e,\delta)) \leftrightarrow \delta \in D_{(st)t}$

A semantic object can only be the content of an asking event if it's in $D_{(st)t}$, the domain of type $(st)t$ expressions: sets of propositions, i.e. questions. This follows from the proposal that the content of a saying event is *content asked about*.

We're now ready to address the crucial observation that RDs are felicitous under rogative verbs of speech (4a, repeated as 81):

(81)   Ayka {asked, wondered}, "Polina likes her job?"

We've come a long way from the initial suggestion that the rogativity of *ask* and *wonder* militate in favor of assigning question denotations to RDs. Because RDs are quotative complements, they don't contribute an ordinary sentential denotation to the compositional process, and they don't compose with verbs of speech via the same thematic structure as ordinary complements. Ordinary clausal complements to *ask* must denote questions because of the requirement placed on the thematic relation of CONTENT as it pertains to asking events (80). But, as we've seen, there is no requirement that every quotative speech report be logically equivalent to some ordinary speech report. Quotative complements involve a different thematic structure than ordinary complements: they do not compose with a verb of speech as mediated by a CONTENT relation, and they aren't subject to the requirements faced by arguments to that CONTENT relation. Instead, the semantics developed in §2 assigns the following representation to RDs embedded under *ask*:

(82)   a.   Ayka asked, "Polina likes her job?"

      b. $[\![(82a)]\!]^{c82a} = \exists e(\text{ASK}(e) \wedge \text{AGENT}(e,\text{a}) \wedge \text{DEM}(e,\text{``Polina likes her job?"}))$

Because the RD in (82a) is a quotative complement, the sentence is interpreted as imposing two relevant constraints on events that could be witnesses for it: they must be asking events (ASK(e)), and they must be events demonstrated by the utterance of the quoted RD (DEM(e,"Polina likes her job?")). This imposes only the restriction that the utterance of the RD demonstrates an asking event. The only way this could have a ramification for whether or not RDs denote questions is if utterances of sentences denoting propositions can't comprise asking events. But there is no reason to assume that this is so. In fact, whether or not it's possible for an utterance of a proposition-denoting sentence to comprise an asking event is exactly what is at issue in the argument over the ramifications of the leaky RD pipeline (see Introduction). So to use the assumption that proposition-denoting sentences cannot comprise askings as an assumption in the argument would be purely circular.

Many theories of RDs assign them propositional denotations (Gunlogson 2001, 2008, Truckenbrodt 2006, Nilsenová 2006, Malamud & Stephenson 2015, Krifka 2015, Westera 2013, 2017, 2018, Rudin 2018a, 2022, Goodhue 2021, a.o.). The puzzle posed by RDs is that they comprise askings despite their declarative form. So any theory on which RDs denote propositions comes packaged with a theory of how they comprise askings despite denoting propositions. A common strategy is to analyze the intonational tune as modulating speaker commitment—whether by changing the commitor from the speaker to the addressee (Gunlogson 2001), making the speaker's commitment dependent on the addressee's (Gunlogson 2008), suspending the maxim of QUALITY (Westera 2018) that gives commitment its force, merely projecting commitment (Malamud & Stephenson 2015), or obviating commitment entirely (Truckenbrodt 2006, Rudin 2022). Speaker commitment is central to many theories of assertion (e.g. Hamblin 1971, Gunlogson 2001, 2008, Farkas & Bruce 2010), providing a well-defined grounding for how manipulating commitment can change an assertion to an asking regardless of whether the uttered sentence denotes a proposition or a question. And the characteristic bias profile that distinguishes rising declaratives from ordinary polar interrogatives can be linked to the difference between asking with a proposition and asking with a question. So the criterion that a performance of an utterance of a rising declarative comprise a demonstration of an asking event, which is all that is required to make (82b) non-contradictory, is met by all theories on which RDs denote propositions. In fact, all such theories predict the acceptability of sentences like (82a) when taken in conjunction with the theory of quotative complements to verbs of speech developed in §2.

I assume that wondering is a species of asking that doesn't involve expectation of a forthcoming response. The explanation of the felicity of rising declaratives under *wonder*, then, is the same as the explanation of the felicity of rising declaratives under *ask*, *mutatis mutandis*.

I turn now to the formal details of what comprises an asking event.

3.4 WHAT EXACTLY COMPRISES AN ASKING?

We've seen that the felicity of RDs as quotative complements to rogative verbs, like *ask*, doesn't provide evidence that RDs denote questions. The facts are not just compatible with, but predicted by, theories on which RDs comprise askings despite denoting propositions.

What embedded RDs under *ask* really give evidence for is the lexical semantics of *ask*.

Above, we saw that theories of RDs on which they denote propositions provide a moderately heterogenous set of explanations that, despite their differences, all rely on the notion that RDs differ from falling declaratives in the status of commitments incurred by virtue of their utterance. Any such theory will suffice to show in what sense RDs comprise askings; for the sake of concreteness of exposition, in the rest of this section I assume an account of rising intonation on which it obviates speaker commitment (Truckenbrodt 2006, Rudin 2022) relative to a discourse model that decomposes the context-update potential of utterances into speaker commitment and issue-raising (Farkas & Bruce 2010). Specifically, I assume a particularly tightly-constrained version of this model on which the denotation of an uttered sentence determines what commitment is incurred by its speaker, and what issue is raised by its utterance: the issue raised by an utterance is always the denotation of the uttered sentence, and the commitment incurred by the speaker is always the "informative content" of the denotation of the uttered sentence, i.e. the grand intersection of propositional alternatives within that denotation (Farkas & Roelofsen 2017). That is to say, if a sentence is declarative, and has a propositional denotation, the speaker commits to that proposition by uttering it; if a sentence is interrogative, and denotes a set of propositions, the speaker commits to the intersection of those propositions, i.e. the proposition that the question has a true answer. To say that rising intonation obviates speaker commitment is to say that an utterance accompanied by rising intonation raises the same issue that it would otherwise, but the speaker incurs no commitment in doing so.

This theory derives the following update potentials for utterances of falling declaratives, rising declaratives, and rising polar interrogatives. In all cases p is the denotation of the sentence radical of the uttered sentence:

(83)   UPDATE WITH FALLING DECLARATIVE

c_0

DC_A	Table	DC_B

CG_0
$PS_0 = \varnothing$

$\rightarrow$

c_1

DC_A	Table	DC_B
p	$\{p\}$	

$CG_1 = CG_0$
$PS_1 = \{CG_1 + p\}$

(84)   UPDATE WITH RISING DECLARATIVE

c_0

DC_A	Table	DC_B

CG_0
$PS_0 = \varnothing$

$\rightarrow$

c_1

DC_A	Table	DC_B
	$\{p\}$	

$CG_1 = CG_0$
$PS_1 = \{CG_1 + p\}$

(85)   UPDATE WITH RISING POLAR INTERROGATIVE

c_0

DC_A	Table	DC_B

CG_0
$PS_0 = \varnothing$

$\rightarrow$

c_1

DC_A	Table	DC_B
	$\{p, \neg p\}$	

$CG_1 = CG_0$
$PS_1 = \{CG_1 + p, CG_1 + \neg p\}$

These representations can be read like so. The Table represents issues that have been raised, roughly equivalent to the most local Question Under Discussion (Roberts 1996). DC_X represents the individual discourse commitments of some interlocutor X. All diagrams above represent utterances carried out by a speaker **A** in dialogue with a speaker **B**. Discourse contexts also involve representation of a common ground CG. Raising an issue updates the projected set PS, representing possible future states of the common ground that could result from resolving the issue currently on the Table. To resolve an issue is to adopt mutual commitments that entail some proposition in that issue, and thereby update the common ground to reflect agreement that that proposition is true. Utterances are functions from an input context to an output context, represented here by c_0 and c_1. See Farkas & Bruce (2010) for more details.

In an update with a falling declarative (83), the speaker has uttered a sentence denoting a proposition p. That denotation determines what the speaker commits to by uttering that sentence, and what issue is raised by virtue of that utterance: the speaker commits to p, and raises a singleton issue containing only p. The speaker projects only one future state of the conversation, and makes a commitment that would resolve that issue in the indicated way if their addressee agrees to make the same commitment.[27] This is a canonical assertion.

In an update with a rising polar interrogative (85), the speaker has uttered a sentence denoting the question $\{p, \neg p\}$. They've also used rising intonation, which calls off speaker commitment. So the only effect of their utterance is to raise the issue $\{p, \neg p\}$. This projects a possible future state of the conversation in which p has become common ground, and a possible future state of the conversation in which $\neg p$ has become common ground. They've made no commitment that would resolve that issue if their addressee agreed to share it, so the addressee must weigh in with their own commitment if the issue is to be resolved. The utterance comprises an asking by virtue of the fact that the speaker has raised an issue without making a commitment that would resolve that issue if made mutual.

An update with a rising declarative (84) shares properties of falling declarative utterances and rising declarative utterances, as reflected by its position in the sequence of examples. The speaker has uttered a sentence denoting the proposition p, and so the issue raised by the utterance is the singleton issue containing only p. Yet, by virtue of their rising intonation, they've made no commitments by virtue of their utterance. The utterance comprises an asking for the same reason that an utterance of a rising polar interrogative comprises an asking: the speaker has raised an issue without making a commitment that would resolve that issue if made mutual. Yet, unlike the rising polar interrogative, the speaker has projected only one possible future state of the common ground, leading to the biased interpretation that distinguishes rising declaratives from ordinary polar interrogatives. See Rudin (2022) for more details on the derivation of the bias profile of rising declaratives.

The crucial takeaway from this whirlwind tour of commitment-obviation theories of rising declaratives is that they rely on a specific formal definition of which context updates comprise askings: a context update comprises an asking iff it raises an issue without making a commitment that would resolve that issue if made mutual. On this theory, RDs can be

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[27]See Walker (1996) for discussion of a default pressure to share commitments made by one's interlocutors.

quotative complements to *ask* precisely because their utterances comprise askings in this formal sense.

To formalize: call an utterance INTRINSICALLY RESPONSE-ELICITING iff it raises an issue without making a commitment that could resolve it. I'll abbreviate this as RESP in formulas. This proposal about the lexical semantics of *ask* can be enforced by the following meaning postulate:

(86)   For any event e, ASK$(e) \leftrightarrow \forall u(\text{DEM}(e,u) \rightarrow \text{RESP}(u))$

This meaning postulate defines the lexical semantics of *ask* by way of a bi-implicational relation between the predicate ASK and possible demonstrations of events. If an event is in the extension of ASK, then it can only be demonstrated by performances of intrinsically response-eliciting utterances. And if all possible demonstrations of an event are made by way of performances of intrinsically response-eliciting utterances, then it's an asking event.

3.4.1   NOT ALL INFORMATION REQUESTS ARE CREATED EQUAL

This formalization of the lexical semantics of *ask* makes a prediction: there exist requests for information that don't comprise askings. That's because it's possible to request information by means other than raising an issue without making a commitment that could resolve it. The prediction that not all information requests comprise askings is borne out by requests for information carried out by imperatives:

(87)   # Ayka asked, "Tell me where you're from."

Imperatives can be used to request information: "Tell me where you're from" is a way to request information from one's addressee. But it requests information by giving a command, not by withholding commitment to an issue that has been raised. Quite the opposite: commitment-making is at the core of imperative meaning (see especially Condoravdi & Lauer 2012, 2017). So the account developed above correctly predicts the infelicity of (87). Here's a proof of its contradictoriness, taking the meaning postulate in (86) as axiomatic:

(88)   a. $\forall e(\text{ASK}(e) \leftrightarrow \forall u(\text{DEM}(e,u) \rightarrow \text{RESP}(u)))$ (axiom 86)
       b. $\neg$RESP("Tell me where you're from.")   (observation)
       c. $\neg\exists e(\text{ASK}(e) \wedge \text{DEM}(e,\text{"Tell me where you're from."}))$ (88a, 88b)

It follows from the lexical semantics of ASK as axiomatized in (86), and from the fact that the performance in (87) is not of an intrinsically response-eliciting utterance, that (87) is necessarily false.

It appears that much the same pattern obtains for speech act nouns like *question*, which also compose with quotative interrogatives and rising declaratives, but not imperatives:

(89)   a.   "Are you in your fifties?" is an insensitive question.
       b.   "You're in your fifties?" is an insensitive question.

c. #"Tell me if you're in your fifties" is an insensitive question.

We can see that *question* is a predicate of communicative acts, not of sentential denotata, because of how it combines with modifiers like *insensitive*. Communicative acts can be insensitive, but sets of propositions can't. It seems that *question* has much the same meaning as *ask*, just in the nominal domain instead of the verbal domain. But a full investigation of the semantics of speech act nominals would take us far outside the scope of this paper, so I leave it at this.

3.4.2 Nonlexical askings

We saw in §2 that verbs of speech like *say* can combine with a huge variety of expressions that don't meet the criterion of denoting propositions: things that aren't clausal, that aren't constituents, that are gibberish, or that don't even contain proper phonemes. The range of quotative complements that are felicitous under *ask* is narrower than under *say*, because its lexical-semantic requirements are more stringent: fewer expressions meet the criterion of raising an issue without making a commitment that could resolve it than meet the criterion of being a vocalization. Nonetheless, there appear to be expressions that meet the criterion of being an asking despite not being full-fledged linguistic expressions:

(90) a. Ayka said, "Hey Polina." "Hmm?", asked Polina.
b. Ayka said, "Have you heard of Agoraphobic Nosebleed?" "Huh?", asked Polina.
c. Ayka said, "Polina, do you have a minute?" "Mmm?", Polina asked, distractedly.
d. Ayka waved at Polina as Polina took a bite of panna cotta. "Mmrph?", asked Polina.
e. Ayka waved at Polina as Polina picked up a heavy stack of books. "Hnng?" asked Polina.

These "interrogative grunts" have an interpretation similar to "root sluices" like *what?* But unlike root sluices, which are derived by clausal ellipsis, interrogative grunts do not involve *wh*-words which can be seen in full sentences. Though we have conventionalized orthographic representations of some interrogative grunts, like *huh* and *hmm*, these are not words that can appear as constituents of full-fledged interrogative clauses, like *what* and *why*. They are full utterances by themselves, not components of any larger syntactic structures. And despite the existence of some conventionalized orthographic forms for interrogative grunts, it appears that any vocalization sonorant enough to carry a rising tune suffices as an interrogative grunt. But despite their dubious status as syntactic objects to which the grammar assigns a question denotation, they're still felicitous under *ask*. This suggests that they qualify as askings by way of prompting addressee response despite not incurring speaker commitment, by virtue of their rising intonation.

3.4.3 Embedded clauses at issue

Several authors (e.g. Simons 2007, Simons et al. 2010, Tonhauser 2012) have argued that utterances of sentences containing certain embedding verbs sometimes have the effect of

making their embedded clause at issue:

(91)   I wonder whether you'd like to go to the dance with me.

Intuitively, the utterance in (91) is a somewhat indirect way of asking the question denoted by the embedded clause. Cases like (91), then, are interestingly similar to RDs. They are declarative sentences with normal declarative denotations, but if, in at least some contexts, we infer that they are meant to raise the issue denoted by their embedded clause, their utterance will have raised an issue that the speaker's commitment to the denotation of the entire sentence cannot resolve—that is to say, in such contexts they are response-eliciting in the formal sense relevant to the lexical semantics of *ask* (86). And, indeed, these sentences are at worst moderately degraded as quotative complements to *ask*:

(92)   a.   ? Ayka asked, "I wonder whether Polina likes her job."
       b.   ? "I wonder whether Polina likes her job," Ayka asked.

Despite their being somewhat degraded, it's clear that these are more acceptable than the examples with imperatives in §3.4.1. It may be that these sentences are moderately degraded because their raising of the issue denoted by the embedded clause happens indirectly, perhaps mediated by pragmatic reasoning, and is not the immediate conventional force of the utterance—so they are intrinsically response-eliciting only once this extra bit of inferencing is completed, not automatically by virtue of their default force.[28]

4   RISING DECLARATIVES DENOTE PROPOSITIONS

Recall this paper's introduction: rising declaratives indicate that there is a leak somewhere in the pipeline from syntactic objects to illocutionary acts. There's a general pathway from declarative clauses to assertions via propositional denotations, and from interrogative clauses to askings via question denotations. But rising declaratives, because they comprise askings but are syntactically declarative, show that there is a leak somewhere in this pipeline. The

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[28]Djärv (2022) observes a particularly interesting interaction between at-issue embedded clause phenomena and rising declaratives: rising intonation on a sentence containing an embedding verb that tends to make its embedded clauses at issue can result in speaker commitment to the matrix attitude report, but rising declarative-style biased questioning of the embedded clause:

(1)   I've heard that her sister isn't doing too well?   (Djärv 2022 ex. 28b)

In this case, the speaker commits to having heard the indicated report; the rising intonation seems to indicate a biased question about whether the embedded clause is true, not whether the entire sentence is true. Djärv (2022) describes these as "embedded" rising declaratives, but there's no sense in which the rising declarative itself is embedded: the rising tune is applied to the full sentence, which occupies a single intonational phrase; there is no 4 juncture separating the embedded clause from the matrix verb, and the matrix verb isn't assigned a tune separate from that assigned to the embedded clause. Rather, this phenomenon appears to be reducible to an interaction between the meaning of rising intonation and the mechanics of at-issue embedded clauses. The observation follows if the commitment-obviation carried out by rising intonation targets only the proposition that is made at issue, leaving the commitment to the matrix clause intact while not making a commitment that would resolve the issue raised by the embedded clause.

leak may be at the juncture between syntax and semantics: RDs denote questions despite being syntactically declarative. Or the leak may be at the juncture between semantics and illocution: RDs comprise askings despite denoting propositions.

This paper's central argument, which has now concluded, is that embedded RDs do not provide an argument that RDs denote questions. The facts are not just compatible with, but predicted by accounts on which RDs denote propositions. Embedded RDs are a useful tool for exploring the semantics of quotative complements to verbs of speech, and the lexical semantics of verbs of speech, but they do not help us resolve the question of where the leak occurs on the way from their declarative form to their asking illocution.

But there's no argument in the other direction either: though these facts follow from theories on which RDs denote propositions, they're also perfectly compatible with theories on which RDs denote questions. So if there's strong independent reason to think that RDs denote questions, the results encountered here are not problematic for that claim.

In this final section, I conclude the paper by briefly giving arguments for why it's desirable to analyze RDs as denoting propositions, and to situate the leak that pulls apart their declarative form from their asking illocution at the juncture of semantics and illocution, not the juncture of syntax and semantics. I put forward two core arguments in favor of a proposition-denoting semantics for RDs. The first is that it's possible to maintain a tight, deterministic, explanatory connection between semantics and illocution without maintaining the prediction that all utterances of sentences that denote propositions comprise assertions, and all utterances of sentences that denote questions comprise askings. So there is no explanatory loss in situating the leak in the pipeline at the juncture between semantics and illocution. The second is that theories that assign RDs question denotations necessitate construction-specific discourse effects, lessening the predictive and explanatory power of the theory. Neither argument is a knockdown argument that RDs *cannot* be analyzed as denoting questions. They're arguments that such theories have undesirable properties that are not shared by theories on which RDs denote propositions and comprise askings in spite of their propositional denotation. And so, *ceteris paribus*, the latter class of theories is to be preferred.

4.1   Tightly welded junctures

It's *prima facie* attractive to have a theory that proposes tight connections between syntax and semantics, and between semantics and illocution. If syntactic form determines semantic interpretation, and semantic interpretation determines illocutionary potential, then we have a highly constrained theory that makes concrete predictions about possible meanings for sentences of different clause types, and possible illocutionary potentials for sentences of different clause types. Without such a theory, we have no explanation for why it's syntactically declarative sentences that are most useful for making assertions, and why it's syntactically interrogative sentences that are most useful for carrying out askings. We should be very concerned indeed at the prospect of not having an explanation for a fact that basic—our theories start to feel merely descriptive, and profoundly unexplanatory, if we have nothing to say about that fact. So a theory where our pipes leak is less desirable than a theory where

the junctures in our pipeline are tightly welded shut.

This consideration doesn't immediately seem to militate for or against theories that would locate the leak in the RD pipeline at the syntax/semantics juncture or at the semantics/illocution juncture: either theory involves an equally leaky pipeline. But this turns out to be a false equivalence once we notice that the illocutionary categories with which we've been describing the syntax-semantics-illocution pipeline are not commensurate with the primitive components postulated by contemporary theories of the update potential of utterances.

It's typical for "scoreboard" models of discourse (Lewis 1979) to contain a variety of primitive components, including individual discourse commitments (Hamblin 1971, Gunlogson 2001), representations of mutual information (Stalnaker 1978), and representations of issues to be discussed and resolved (Roberts 1996, Ginzburg 1996). The popular Table model (Farkas & Bruce 2010) in which many recent accounts of RDs are formalized (Malamud & Stephenson 2015, Farkas & Roelofsen 2017, Jeong 2018, Rudin 2018a, 2022, Goodhue 2021) makes use of all three types of primitives. These models become explanatory, not merely descriptive, if one commits to a tight relationship between the semantics of a sentence and the "conventional discourse effect", or context update potential, of an utterance of that sentence (Farkas & Roelofsen 2017, Rudin 2022, Farkas 2022). These theories propose a tightly welded juncture between semantics and illocution: the semantics of a sentence determines the issue-raising potential and commitment-making potential of utterances of that sentence.

But note that these theories do not contain primitives like "assertions" and "askings". The primitive components that these theories assume are at a lower level than illocutionary forces like these. Rather than being primitive, assertions and askings can be defined in terms of *configurations* of primitives: an assertion is a context update in which the speaker raises an issue with only one resolution, and commits to that resolution; an asking is a context update in which the speaker raises an issue without making a commitment that could resolve it. This means that a theory with a tightly welded juncture between semantics and illocution *need not predict* that the utterance of any sentence with the same denotation will comprise the same illocutionary act. The tightly welded juncture—the deterministic, explanatory relation between semantics and illocutionary potential—that such theories propose is that the denotation of a sentence determines its issue-raising potential and its commitment-making potential. The tight welding is about how semantics relates to the primitive components of context-update models, not about how semantics directly determines higher-level illocutionary forces. And if not all utterances make use of that issue-raising potential and that commitment-making potential in the same way, it doesn't follow that the utterance of any sentence with the same illocutionary *potential* will comprise the same illocutionary act, on the higher-order level described by terms like assertion and asking.

To see how this could be, note that many accounts making use of commitment-based discourse models treat commitment potential as something that can be manipulated by certain operators, including evidentials (Faller 2019), emotive markers (Rett 2021), discourse particles (Kraus 2018, Wei 2020, Yang 2020), and, most pertinently, intonational tunes (Gunlogson 2001, Truckenbrodt 2006, Rudin 2022). On a commitment-obviation theory of

rising intonation like that described in §3.4, RDs have their characteristic force because speaker commitment is cancelled by rising intonation. On this view, there is not actually a leak at the semantics/illocution juncture, conceived as a deterministic relation between the semantic content of a sentence and its potential to affect the primitive components of the model of discourse context. The deterministic, explanatory connection between semantics and illocutionary potential—defining the commitment-making potential and issue-raising potential of the utterance—remains tightly welded. The difference between rising and falling declaratives comes from whether or not the utterance *makes use* of the commitment-making potential of the sentence, not from variation in what the commitment-making potential of the sentence is.

So a theory that places the "leak" in the RD pipeline at the semantics/illocution juncture makes no real sacrifice of explanatory tightness. It only appears that way because we began by stating our illocutionary categories at a higher level than the primitives that are actually involved in current theories of the context update potential of utterances. There is no leak in the pipeline on these theories, only a "leak" in scarequotes.

4.2 CONSTRUCTION-SPECIFIC DISCOURSE EFFECTS

A theory of the meaning of rising (and falling) intonation is accountable to many compositional puzzles. It's not just that rising intonation turns syntactically declarative sentences into questions with a particular characteristic bias profile. The same rising intonation accompanies polar interrogatives without introducing bias. Polar interrogatives accompanied by falling intonation still carry out unbiased askings, but with an inference of irritation or impatience. And *wh*-interrogatives are accompanied by the same falling tune as assertive declaratives, and are infelicitous when accompanied by rising intonation. See Bartels (1999) for more detailed empirical description. This is the empirical gauntlet that theories of rising intonation face: not just describing the behavior of rising declaratives, but explaining why rising intonation does not result in biased polar interrogatives, and why polar and *wh*-interrogatives have such asymmetrical intonational profiles. And a theory of rising intonation should, by analyzing the contribution the intonation makes to any clause type it accompanies, also make predictions about less well-studied domains, like the intonation of imperatives (Jeong & Condoravdi 2017, 2018, Portner 2018, Rudin 2018a,b, Rudin & Rudin 2022) and exclamatives (Rett & Sturman 2021), prompting useful discoveries.

Stipulating construction-specific discourse effects for rising declaratives (Gunlogson 2008, Malamud & Stephenson 2015, Jeong 2018) can be useful in the way that any serious, well-formalized description can be useful, and the literature has been pushed forward significantly by such proposals. But construction-specific stipulations about rising declaratives swear off the gauntlet described above: they are accountable to less data, and so less constrained in what they can say; they make no predictions about anything other than RDs, and so are able to generate a much narrower band of future investigation. Faced with the choice between two theories that successfully capture some core set of facts, the choice of the more constrained and more predictive theory is clear (Lakatos 1970).

This point, about the desirability of accounts of intonational meaning that avoid

construction-specific stipulations, applies to the choice between theories that treat RDs as denoting questions, and theories that treat RDs as denoting propositions. Theories that treat RDs as denoting questions virtually necessitate construction-specific stipulations, because they assign RDs the same denotations as the corresponding polar interrogatives. This means that, if the semantics/illocution juncture is to be kept tight, the discourse effect of RDs must be differentiated from the discourse effect of polar interrogatives by construction-specific fiat.

Farkas & Roelofsen (2017) are very sensitive to this worry, and they actively pursue a compositional theory of intonational meaning. Rising intonation, for them, contributes a question-forming operator to the compositional semantics, resulting in a theory of intonational meaning on which intonational tunes operate entirely on the level of determining the denotation of a sentence, allowing for an account of its contributions across clause types. And Farkas & Roelofsen (2017) assume a very tightly-welded juncture between semantics and illocution, where the context update carried out by the utterance of a sentence is determined *entirely* by that sentence's denotation. This creates a problem: because they've located the meaning of rising intonation entirely on the level of semantic content, they derive semantic representations for RDs that are indistinguishable from the semantic representations of the corresponding polar interrogatives. And because they're committed to deriving context update potential from the denotation of a sentence, they predict that RDs should carry out context updates identical to those carried out by polar interrogatives. So the fact that RDs are biased in a way that polar interrogatives are not cannot be predicted by their core theory.

To solve this problem, Farkas & Roelofsen (2017) make a construction-specific stipulation: RDs are assigned an additional discourse effect, directly encoding their bias and distinguishing them from polar interrogatives. To make this more palatable, Farkas & Roelofsen (2017) appeal to the notion that RDs receive this additional discourse effect in view of the fact that they are "marked" forms. But it's not clear in what sense they're marked. They're certainly not marked in the literal sense of the term, the sense in which negative polarity is marked and positive polarity is unmarked. There is no linguistic material that is overt in rising declaratives but covert in nearby forms, like rising polar interrogatives and falling declaratives. It's not the case that RDs are marked in the sense of being more complex forms than nearby alternatives: the L* H-H% tune that accompanies RDs is no more formally complex than the H* L-L% tune that accompanies falling declaratives, and is identical to the tune that accompanies "unmarked" polar interrogatives. And there's no difference in the complexity of the semantic representations involved: on this account, RDs have identical semantic representations as polar interrogatives, and do not take a more complicated compositional pathway to get there. So the only sense in which "marked" is applicable is the loosest possible sense: the sense of "that's not the ordinary way to ask a question", "that question has a bias that is not what is ordinarily expected from the pragmatics of question-asking", or "that's not the ordinary intonational tune for declarative sentences". But the job of a compositional theory of rising declaratives is to explain *why* that's not the ordinary way to ask a question, *why* RDs have the bias profile they have, and *why* that's not the ordinary intonational tune for declaratives to have. Such a theory should derive a discourse effect for RDs that is not a standard-issue asking, a discourse effect for rising polar interrogatives

that is, and a discourse effect for falling declaratives that captures why a falling declarative is a more ordinary use of a declarative denotation than an RD is. So justifying assigning a construction-specific discourse effect to RDs by appeal to their status as "marked" forms in this loose sense appears to be a case of mistaking an explicandum for an explanans. Appeal to markedness does not save the account from the criticism that it relies on stipulative construction-specificity, and that construction-specificity is a consequence of the decision to analyze RDs as question-denoting.

4.3 Taking stock

Above are two arguments for why theories of RDs on which they denote propositions are desirable to theories of RDs on which they denote questions. Obviously, a property of accounts of a phenomenon that is preferable *ceteris paribus* should only be treated as a desideratum if *ceteris* is *paribus*. If there were empirical facts strongly militating against that choice, we would be forced to stomach abandoning those desirable properties in favor of a more empirically successful theory that lacks them. But, this paper argues, we have not encountered such facts. The embedding behavior of RDs is not incompatible with proposition-denoting theories of RDs. Quite the opposite: such theories *predict* all the facts we've encountered. There are reasons to prefer proposition-denoting theories of RDs *ceteris paribus*, we've encountered no *ceteris* that is not *paribus*.

Rather than providing an empirical test for theories of the semantics of RDs, investigating the behavior of RDs embedded under verbs of speech is helpful for developing a semantics of quotative complements to verbs of speech, and a lexical semantics for rogative verbs of speech. Quotative complements to verbs of speech contribute a different kind of semantic object to the compositional semantics than ordinary clausal complements do: a performance, not a sentential denotation. And speech reports with quotative complements have a different thematic structure than speech reports with ordinary clausal complements: one involving demonstration, not content. This difference in thematic structure is reflected in different entailment patterns between quotative speech reports and ordinary speech reports, and results in an absence of necessary logical equivalence between quotative and non-quotative speech reports. It also results in a difference in restrictions on what can be embedded in each way. Ordinary clausal complements must contribute content of the right kind, resulting in semantic restrictions on what that embedded clause may denote. But quotative complements do not contribute content; they must merely qualify as the right kind of demonstration. So the semantic restrictions a verb places on its ordinary clausal complements need not translate into semantic restrictions placed on its clausal complements.

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