



## On the Rise and Fall of Declaratives

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**Abstract.** This paper argues for a new way of thinking about semantic and pragmatic effects of particular sentence intonation patterns. The main focus of the paper is on the so-called rising declaratives, i.e. sentences that have the surface structure of a declarative sentence but are pronounced with a rising pitch contour. Rising declaratives differ from both declaratives with a falling pitch contour and questions in their pragmatic effect. Our goal is to account for this difference. We propose that rising intonation contour is syntactically realized. Its semantic import is to determine the resolution of a variable in the speech act projection, i.e. rising intonation operates on speech acts. The pragmatic effects associated with rising declaratives are shown to follow from this minimal assumption and the independently motivated tenets of speech act theory.

### 1 Introduction

Rising declaratives are declarative sentences with a rising pitch contour, which we indicate with a question mark in the following examples. They are known to exhibit pragmatic effects distinct from those of declarative sentences with a falling pitch contour (e.g. Gunlogson 2003). Most prominently, rising declaratives elicit a yes/no response from the addressee, similar to polar interrogatives. This is shown in (1) where the utterance by A is naturally followed by B's response with yes or no. An utterance of a falling declarative does not generally require such a response.

(1) Elicitation of response

A: John has a sister? / Does John have a sister?

B: Yes. / No.

However, besides the obvious similarity in function between rising declaratives and polar interrogatives, there are several facts that distinguish these two classes of expressions. These facts suggest that rising declaratives express propositions in a way polar questions do not. In this respect, rising declaratives resemble falling declaratives. As seen in (2a), a rising declarative can be picked up by the propositional anaphor *that* and claimed to be true in the actual world. Clearly, this is not possible with polar questions: they denote sets of propositions and, accordingly, are not true or false (Hamblin 1973; Karttunen 1977).

This is illustrated in (2b) where the indicative *be correct* cannot be felicitously predicated of the anaphor. Although polar questions may make certain propositions salient, these do not enjoy the same discourse status as the propositions introduced by rising declaratives. This is shown by the B' response in (2b) where the use of subjunctive mood is obligatory.

(2) Predication of correctness

- a. A: John smokes? / John smokes.  
B: That's correct.
- b. A: Does John smoke?  
B: #That's correct.  
B': That would be surprising.

Furthermore, (3a) shows that consent to and dissent from a conjunction of two rising declaratives is equivalent to affirming or negating a conjunction of two propositions, respectively. For example, a positive reply to A's utterance in (3a) entails that I smoke and I drink, while a negative reply entails that either I don't smoke or I don't drink. On the other hand, a single yes or no response to a conjunction of two interrogatives is not possible, as is shown by the infelicitous discourse in (3b). Thus, rising declarative discourses but not polar question discourses parallel (dis)agreement patterns found with conjoined falling declaratives (4).

(3) Conjunction

- a. A: You smoke? And you drink?  
B: Yes. (I smoke and drink.) / No. (I smoke but don't drink.)
  - b. A: Do you smoke, and do you drink?  
B: #Yes. / #No.
- (4) A: John smokes and he drinks.  
B: Yes. (He smokes and drinks.) / No. (He drinks but doesn't smoke.)

Another property which assimilates rising declaratives to falling declaratives is the inability to license NPIs, as illustrated by the unacceptable (5a). The inability to license NPIs sets rising declaratives apart from regular interrogatives since the latter can license NPIs, as is shown in (5b).

(5) NPI licensing

- a. \*John lifted a finger to help?
- b. Did John lift a finger to help?

Finally, rising declaratives differ from interrogatives in being ‘prejudiced’ or ‘biased.’ There are many types of examples in the literature that illustrate this. We focus on three examples discussed by Gunlogson (2003) which we take to be representative. (6) shows that a rising declarative is inappropriate in contexts where the speaker is supposed to be neutral, e.g. in an unbiased committee hearing. In such a neutral setting, the polar interrogative in (6a) is appropriate, indicating that the speaker does not know about the political affiliations of the hearer. On the other hand, it is inappropriate to use a rising declarative in such a context. Intuitively, this is because a rising declarative leaves the impression that the speaker suspects the hearer to be a communist, which is incompatible with the hypothesized neutrality of the hearing.

(6) Committee hearing

- a. Are you a member of the Communist Party?
- b. #You are a member of the Communist Party?

(7) shows that rising declaratives cannot be used as conversation openers. An utterance of a rising declarative in (7) requires there to have been a preceding exchange between the speaker and the hearer concerning the whereabouts of Laura. This is incompatible with an out-of-the-blue context.

(7) Initiating a phone conversation

- a. Is Laura there?
- b. #Laura’s there?

A similar point is raised by (8). Suppose I am sitting in a windowless room and my friend comes in. If I want to know whether it is raining outside, I can ask for this information by uttering a polar interrogative (8a). However, it would be strange for me to use a rising declarative in this context – unless my friend is holding an umbrella or is all wet. Thus, the use of rising declarative requires the speaker to have reasons to believe that the expressed proposition is true.

(8) Windowless room

- a. Is it raining?
- b. #It’s raining? (appropriate only in the presence of an umbrella...)

We have presented four types of differences between rising declarative and polar interrogatives. These differences relate primarily to what types of objects seem to be made available by the respective phrases (propositions vs. sets of propositions) and to what conditions rising declaratives and polar questions impose on the context (bias). On the other hand, we have also seen differences

between rising and falling declaratives: only the former elicit a yes/no response. An adequate theory of rising declaratives should provide an account of these asymmetries. The goal of this paper is to provide such a theory.

In Section 2, we review three previous accounts of rising declaratives and some of their difficulties. In Section 3, we present our analysis and derive the facts described in Section 1. The analysis builds on two ideas: (i) speech act operators are syntactically represented and parameterized and (ii) rising intonation may constrain/determine their parameters. We also show that our proposal is immune to the objections to previous accounts that we discuss in Section 2. In Section 4 we discuss some extensions of the proposal and conclude.

## 2 Previous Accounts

This section reviews three representative accounts of rising declaratives and some of the issues that they face. The first is Gunlogson's commitments account (2002; 2003); the second is Šafářová's modal account (2005; 2007); the third is that of Truckenbrodt (2006).

### 2.1 Gunlogson's Account

Gunlogson (2002; 2003) models the context of conversation as a pair  $\langle cs, ca \rangle$ , where  $cs$  represents the public commitments (public beliefs) of the speaker and  $ca$  represents public commitments of the addressee. The main component of Gunlogson's proposal are the update rules in (9), which say that a falling declarative updates *the speaker's* public commitments, while a rising declarative updates *the addressee's* public commitments. Thus, Gunlogson establishes a sort of form-function parallelism, in the sense that all declaratives are uniformly propositional and are used to update public commitments of discourse participants. In the following, we use  $\uparrow$  to indicate rising intonation and  $\downarrow$  to indicate falling intonation.

- (9) Update rules  
 $\langle cs, ca \rangle + \downarrow \phi = \langle cs \cap \llbracket \phi \rrbracket, ca \rangle$   
 $\langle cs, ca \rangle + \uparrow \phi = \langle cs, ca \cap \llbracket \phi \rrbracket \rangle$

However, the update rules in (9) do not on their own explain why rising declaratives are perceived as biased questions. Gunlogson addresses this issue by proposing specific definitions of 'bias' and 'question.' Specifically, she proposes that a context  $\langle cs, ca \rangle$  is 'biased toward a proposition  $p$ ' iff  $p$  can become public commitment of both speaker and addressee, but  $\neg p$  cannot. In other words,  $c$  is biased toward  $p$  iff at least one discourse participant has committed herself to  $p$ .

- (10) Bias  
 $\langle cs, ca \rangle$  is biased toward  $p$  iff for some  $x$ ,  $cx \subseteq p$

The notion of ‘question’ is defined as ‘not changing the commitment set of any discourse participant.’ This is formulated in (11).

- (11) Question  
 $\phi$  counts as a question iff  $\langle cs, ca \rangle + \phi = \langle cs, ca \rangle$

According to these definitions, it holds that a rising declarative counts as a question just in case there is bias, i.e. if the addressee has publicly committed herself to the propositional content of the declarative.

- (12)  $\uparrow \phi$  is a question iff  $ca \subseteq \llbracket \phi \rrbracket$

An example that Gunlogson presents to support this treatment is the exchange in (13). With her utterance, A publicly commits herself to the proposition that she has a sister. Upon A’s utterance, B knows that A has a sister. Nevertheless, B can follow A’s utterance with a rising declarative. According to Gunlogson, B’s utterance feels like a question exactly because A has publicly committed herself to having a sister.

- (13) A: I have to pick up my sister from the airport.  
 B: You have a sister?

The main problem with this account is that it predicts that whenever a rising declarative is used as a question, it must be clear to both speaker and addressee that the answer will be yes. Thus, it is not clear what B is asking in (13): B cannot be asking whether A has a sister, since after A’s utterance, B knows that A will give a positive answer. Now, suppose that B pretends not to know this. Gunlogson then predicts that B’s utterance is not a question anymore. This is because to pretend not to know that A has a sister, B must also pretend that A has not committed herself to the proposition that A has a sister. According to the characterization in (12), B’s utterance can then not be intended as a question.

Another problem for Gunlogson’s theory is that it predicts that a negative answer to a rising declarative is always a contradiction. Imagine that A responds with “no” to B in (13). A would clearly be contradicting herself. Gunlogson predicts that any negative answer to a rising declarative should feel the same way. This does not seem correct in the light of the following data.

- (14) A: I bought Critique of Pure Reason yesterday  
 B: You read Kant?  
 C: No. I just want to have it on the shelf.

Finally, we believe that Gunlogson's definition of 'question' is unmotivated. It is true that questions have been defined in such a way that they do not contract or expand the context set (e.g. Groenendijk 1999). But isolating this feature and elevating it, in contrast to some other features of question, to the *defining* property of questions requires further support.

## 2.2 Šafářová's Account

Šafářová (2005, 2007) develops a modal analysis of rising intonation where she treats the final rise as a modal operator of epistemic uncertainty akin to *might*. In her account she utilizes update semantics (Veltman 1996) and a modified Groenendijk & Stokhof semantics of the question operator, whereby the context is modeled as an equivalence relation on a set of possible worlds. The updates are defined as in (15).

- (15) a.  $c[p] = c \cap \{(i, j) \mid \llbracket p \rrbracket(i) = \llbracket p \rrbracket(j) = 1\}$   
 b.  $c[\Diamond \phi] = c$  if  $c[\phi] \neq \emptyset$ , otherwise  $c[\Diamond \phi] = \emptyset$   
 c.  $c[?\phi] = c \cap \{(i, j) \mid (i, i) \in c[\phi] \text{ iff } (j, j) \in c[\phi]\}$

The next three ingredients in Šafářová's system are the definitions of strength and answerhood and a formalization of Grice's maxims of conversation.

- (16)  $\phi$  is stronger than  $\psi$  iff  $c_0[\phi] \subset c_0[\psi]^1$   
 (17)  $\psi$  is a answer to  $?\phi$  iff either (a) or (b) holds:  
 a.  $\psi = \phi$   
 b. There is an answer  $\chi$  such that  $c_0[\psi][\chi] = \emptyset$  and there is no answer  $\chi'$  such that  $\chi'$  is a formula of propositional logic (i.e. contains no  $?$  or  $\Diamond$ ) and  $\psi$  is stronger than  $\chi'$ .  
 (18) Maxims of conversation  
 a. Relation: every statement is an answer to an unresolved question (explicit or accommodated)  
 b. Quality I: every statement is the strongest statement with respect to  $cs$

<sup>1</sup> To be more precise, iff  $\text{dom}(c_0[\phi]) \subset \text{dom}(c_0[\psi])$ , where  $\text{dom}(\delta) = \{i \mid (i, i) \in \delta\}$ . For expository purpose, we will write ' $c[\phi]$ ' instead of ' $\text{dom}(c[\phi])$ ', when it is intuitively clear what is meant.

With these concepts in hand, Šafářová (2007: 311) proposes the following analysis for rising declaratives:

[W]e take the meaning of the final rise to be that of [...] Veltman's (1996)  $\diamond$ -operator [...] [U]ttering [ $\diamond\phi$ ] accommodates [the question  $?\diamond\phi$ ] which has  $\diamond\phi$ ,  $\phi$  and  $\neg\phi$  among its answers. In a rational conversation, participants cooperate on finding the strongest possible answers to questions that have been raised (whether overtly or accommodated). Therefore, if a  $?\diamond\phi$  question has been raised and there is a participant who knows that either  $\phi$  or  $\neg\phi$  is the case, she has to say so. Thus, a rising declarative [...] will frequently be followed by a 'response'. Crucially, this response is not an answer to the rising declarative but to the question accommodated due to the use of the rising declarative.

The proposal faces certain issues. The most apparent issue, acknowledged by Šafářová, is the difference between a rising declarative and a sentence headed by *might*, which is what Veltman's  $\diamond$  was intended to model. More to the point, it is not clear why rising declaratives and existential modal sentences trigger such distinct conversational effects.

Furthermore, the derivation of the positive bias of rising declaratives is problematic in her system. To do this, Šafářová employs the following maxim:

- (19) Quality II: every  $\phi$  is non-redundant  
 ( $\phi$  is redundant iff  $cs[\neg\psi] = c[\neg\psi]$ , where  $\psi$  results from stripping  $\phi$  of all instances of  $\diamond$ )

Given the assumption that  $cs \subseteq c$  (the speaker believes what is common ground), it follows from Quality II that the speaker of  $\diamond\phi$  "believes  $\neg\phi$  to be less likely" in the sense that "there are less  $\neg\phi$  worlds in  $c$  than in  $cs$ " (Šafářová 2005: 365). Namely, for  $\diamond\phi$  to be non-redundant, it must hold that  $cs[\neg\phi] \neq c[\neg\phi]$ ; this means, assuming  $cs \subseteq c$ , that  $cs[\neg\phi] \subset c[\neg\phi]$ . However, it is not clear how this reasoning explains the bias of rising declaratives. Suppose  $c = \{i, j, k, \dots\}$ ,  $cs = \{i, k\}$  and  $c_0[\neg\phi] = \{i, j\}$ . Then  $\diamond\phi$  is not redundant (as  $cs[\neg\psi] \neq c[\neg\psi]$ ), but  $\neg\phi$  is likelier in  $cs$  than in  $c$ , which contains a whole sequence of  $\neg\psi$  worlds, starting with  $k$ . Furthermore, in both  $c$  and  $cs$ ,  $\neg\psi$  is at least as likely as  $\psi$ .

### 2.3 Truckenbrodt's Account

Truckenbrodt (2006) develops an account that builds on two ideas. The first relates to the semantic import of intonation: using a falling declarative  $\downarrow\phi$  commits the speaker to  $\phi$ , similar to Gunlogson; using a rising declarative  $\uparrow\phi$  simply indicates the absence of this commitment, unlike in Gunlogson. The second idea is that uttering a declarative  $\downarrow\phi$  or  $\uparrow\phi$ , the speaker conveys that he wants the hearer to make it common ground that  $\phi$ . Truckenbrodt elegantly employs these notions to derive the pragmatic effects discussed above. Namely,

by uttering  $\uparrow \phi$  the speaker, on the one hand, indicates that it is not the case that she believes  $\phi$  and, on the other hand, indicates that she wants the hearer to make it common ground that  $\phi$ . If the speaker believes that the hearer does not believe that  $\phi$ , it is not possible to expect her to make it common ground that  $\phi$ . Thus, the speaker who utters  $\uparrow \phi$  must believe that the hearer believes that  $\phi$ , and this is the bias that Gunlogson claims accompanies rising declaratives.

What we think is problematic for Truckenbrodt's theory is the fact that rising declaratives elicit a response in a way falling declaratives do not. Truckenbrodt could claim that the ability of rising declaratives to elicit a response follows from the speaker not believing that  $\phi$  and her expressed desire that  $\phi$  be made common ground: this desire would not be satisfied if the addressee does not utter  $\downarrow \phi$ . However, this raises the question why the same does not hold for falling declaratives. In both cases the addressee plays a crucial role in making  $\phi$  common ground; it is not clear why the belief states of the speaker should make a difference.

To summarize, we have presented three representative accounts of rising declaratives. Although all three approaches shed important light on rising declaratives, we pointed out issues that they face. The first was the account by Gunlogson (2002, 2003). We have argued that its main difficulty was to come to terms with the questioning nature of rising declaratives in a non-ad-hoc manner. The second account was the modal treatment of rising declaratives by Šafářová (2005, 2007). Besides pointing to dissimilarities between modals and rising declaratives, we have argued that it is not entirely successful in accounting for the positive bias of rising declaratives. The third approach was by Truckenbrodt (2006). We pointed out an issue with deriving elicitation accompanying rising declaratives. In the following section, we develop a novel treatment of rising declaratives that avoids the issues described in this section.

### 3 Analysis

This section introduces our analysis of rising declaratives. We share with Gunlogson and Truckenbrodt the idea that the bias of rising declaratives supervenes on the belief of the hearer in the propositional content of the sentence. Unlike in Gunlogson, beliefs enter our analysis only indirectly, via the logic of assertion. This resembles the strategy pursued by Truckenbrodt. We begin this section by looking at the speech act of assertion and the Performative Hypothesis. We propose that rising intonation 'inflects the performative prefix,' i.e. we argue that the semantic import of rising intonation is to determine the interpretation of a variable in the speech act projection. We conclude by deriving the facts discussed in the first section.



### 3.1 Ingredients: Assertion, Belief, Performative Hypothesis

Assertion is one of the most studied topics in linguistics. Accordingly, there are many theories dealing with it. However, all theories seem to agree that assertion has at least the two properties discussed in this subsection. It is these two properties that form the basis of our account. First, asserting a proposition *p* requires believing that *p*. We call this principle the Sincerity Principle, adopting Searle's terminology.

- (20)     Sincerity Principle (cf. Searle 1969; Grice 1975)  
           Assert only what you believe

The second principle is a constraint proposed by Robert Stalnaker. It says that an assertion must be false in some worlds of the context set. In other words, assertion of *p* means that *p* is not in the common ground, i.e. not presupposed. We call this principle the Informativity Principle.

- (21)     Informativity Principle (Stalnaker 1978)  
           Assert only what is not mutual belief, i.e. what is not presupposed

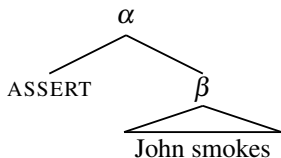
The next ingredient of our theory is the assumption that speech act theory is part of semantic theory. This is subsumed by the Performative Hypothesis which says that sentences are headed by speech act operators and that the investigation of speech acts is just the investigation of the meaning of these operators. This idea is explicitly expressed in a quote by Gazdar (1979: 18f):<sup>2</sup>

Every sentence has a performative clause in deep or underlying structure [...]  
 The subject of this clause is first person singular [...] Illocutionary force is semantic (in the truth-conditional sense) and is fully specified by the meaning of the performative clause itself.

We assume that declaratives used as assertions are headed by a speech act operator, ASSERT, which incorporates the logic of assertion delineated above (cf. Ross 1970; Lakoff 1970; Sadock 1974; Gazdar 1979; Krifka 1995, 2001; Tenny & Speas 2004; among others). These assumptions are illustrated on a concrete example, the sentence *John smokes*, in the following. The LF of the sentence is given in (22). We have an ASSERT operator c-commanding the proposition-denoting constituent. The semantic import of the whole sentence is that the speaker asserts that John smokes. This entails, given the Sincerity and Informativity Principles, that the speaker believes that John smokes and that it is not presupposed that John smokes.

<sup>2</sup> It is important to point out that Gazdar did not endorse the Performative Hypothesis.

(22) a.



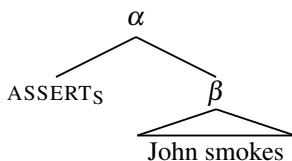
- b.  $\llbracket \phi \rrbracket^c = 1$  iff the speaker in *c* asserts that John smokes  
 $\Rightarrow$  the speaker in *c* believes that John smokes  
 $\Rightarrow$  that John smokes is not in the common ground in *c*

All variants of the Performative Hypothesis tend to have it as part of the meaning of the ASSERT operator that the assertor is the speaker; this is reflected in Gazdar's quote above. However, in contrast to other approaches, we propose that ASSERT can inflect for person and that this inflection is reflected in the intonation of the sentence. In particular, rising intonation indicates that ASSERT has a second person feature, while falling intonation indicates that the assertor is the first person, i.e. the speaker.

(23) Falling declaratives

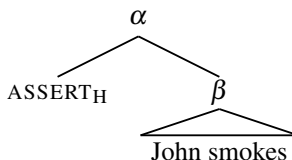
- a. John smokes ↓

b.

(24) Rising declaratives

- a. John smokes ↑

b.



The question that now arises is how the sentences headed by ASSERT, such as (24b), are used. They are descriptions of the world, so they are either true or false. So uttering a sentence is giving a description of the world. Now, giving a description of the world is proposing that that description be accepted as accurate. Thus, we assume the following rule for using declaratives:

(25) Rule for using declaratives

A declarative  $\phi$  is used in context  $c$  to propose that  $c$  be updated to  $c \cap \llbracket \phi \rrbracket$ .

It follows immediately from this rule that the speaker of (24b) is proposing to make it common ground that the hearer asserts that John smokes.

(26) Corrolary

A rising declarative  $\uparrow \phi$ , i.e. a sentence with the structure  $[\text{ASSERT}_H \phi]$ , is used in context  $c$  to propose that  $c$  be updated with the proposition that the hearer asserts that  $\phi$ .

**3.2 Deriving the Facts**

With the above tools in hand, we can now return to the facts described in Section 1. The first fact that we need to account for is the response elicitation effect of rising declaratives.

- (1) A: John has a sister? / Does John have a sister?  
B: Yes. / No.

In our system, this is due to the fact that uttering a rising declarative means making a proposal. A response is expected when a proposal is made. This is particularly pressing with rising declaratives where it is proposed that *the hearer* asserted something and has thus committed herself to a particular proposition. In the case of falling declaratives, where the agent parameter is resolved to the speaker, a proposal is made as well. The self-verifying nature of this latter case makes a response from the hearer either redundant or inappropriate.

The second fact involves the difference between polar interrogatives and rising declaratives with respect to making available propositional antecedents.

- (2) a. A: John smokes? / John smokes.  
B: That's correct.  
b. A: Does John smoke?  
B: #That's correct.  
B': That would be surprising

In (26a), the anaphor *that* picks up the proposition-denoting complement of ASSERT (27). As we can see in (28), it is not unusual that *that* can refer to embedded propositions.

- (27) a.  $\text{ASSERT}_H [\phi \text{ John smokes}]$   
b.  $\text{That}_\phi$  is correct

- (28) A: Mary thinks [ $\phi$  John smokes]  
 B: That $\phi$  is correct

However, as we can see in (29), an embedded question seems not to be able to deliver a unique salient proposition that can be anaphorically referred to by *that*.

- (29) A: Mary knows [ $\phi$  whether John smokes]  
 B: \*That $\phi$  is correct

Now, suppose that the question in the (b)-example in (2) consists of a speech act operator QUEST and a question-denoting constituent  $\phi$ . We correctly expect that  $\phi$  cannot be picked up by *that*.

- (30) a. QUEST<sub>S</sub> [ $\phi$  whether John smokes]  
 b. \*That $\phi$  is correct

A related set of data was observed in responses to conjoined rising declaratives. Unlike with polar interrogatives, a single response to conjoined rising declaratives is possible, similar to what we find in (dis)agreement with falling declaratives.

- (3) a. A: You smoke? And you drink?  
 B: Yes. (I smoke and drink.) / No. (I smoke but don't drink.)  
 b. A: Do you smoke, and do you drink?  
 B: #Yes. / #No.

Namely, a rising declarative expresses a proposition, so a conjunction of two rising declaratives will also express a proposition; this proposition can be agreed with or contested.

- (31) a. You smoke? And you drink?  
 b. [[ASSERT<sub>H</sub> you smoke] and [ASSERT<sub>H</sub> you drink]]  
 c. H asserts that H smokes and H asserts that H drinks

If the response to conjoined rising declaratives is yes, we commit ourselves to the same inferences as when agreeing to conjoined falling declaratives or, more appropriately, a falling declarative where the complement of ASSERT is a conjunction.

Now, disagreeing with a falling declarative  $\downarrow \phi$  is not contesting that the speaker asserted  $\phi$  but contesting the content of  $\phi$ . Although it is intuitively clear why this should be the case (it is non-sensical to contest that the speaker asserted  $\phi$ ), it is puzzling that no can then be treated as contesting the proposi-

tion embedded under ASSERT. We propose that this is also what is going when contesting rising declaratives. In particular, by a negative response to a conjunction of rising declaratives, one is contesting at least one of the conjuncts and, accordingly, the propositional content embedded under the assertion operator. A more thorough investigation of negative responses to and disagreement with rising and falling declaratives is left for further work.

The strategy just outlined is not available for conjoined polar interrogatives. Following the standard treatments of questions, a conjunction of two polar questions is either a four-way partition (cf. Groenendijk & Stokhof 1984) or a set of four propositions in Hamblin semantics. Now, a yes or no response requires a bi-partition or a set of two propositions (one being the negation of the other) – otherwise yes or no cannot identify the appropriate cell or proposition as an answer. Accordingly, we predict a yes or no response to be infelicitous after a conjunction of polar interrogatives.

The inability of rising declaratives to license NPIs also follows straightforwardly since changing the person feature of ASSERT does not create an affective environment which would license NPIs.

- (5) a. \*John lifted a finger to help?  
b. Did John lift a finger to help?

As for the bias of rising declaratives, here is how we account for it. First, it is natural to assume that when the speaker S proposes that the hearer H asserts that  $\phi$ , S must believe that the conditions for H's assertion of  $\phi$  are satisfied. One of these conditions, as we have seen, is that H believes that  $\phi$  (Sincerity Principle). Accordingly, a rising declarative  $\uparrow \phi$  gives rise to the inference that the speaker believes that the hearer believes that  $\phi$  and will acquiesce to the assertion. In the committee hearing example the reasoning proceeds in the following way: if I utter (32b), I make the proposal that you assert that you are a communist; this means I must believe that you are in a position to assert that you are a communist, i.e. I believe that you believe that you are a communist. This is exactly the prejudice that we want to account for.

- (32) a. Are you a member of the Communist Party?  
b. #You are a member of the Communist Party?

Note that we also account for the fact that rising declaratives can be used to signal an “informative presupposition”, as seen in (33), repeated in (33).

- (33) A: I have to pick up my sister from the airport.  
B: You have a sister?

B's utterance is a proposal that A asserts that A has a sister. The principle of Informativity dictates that what is asserted is not presupposed. Thus, B in effects proposes to make the information that A has a sister non-presupposed information, which is intuitively the case here: B does not doubt that A has a sister, but only lets A know that this fact was not mutual belief.

Finally, our system does not face the issues that we have presented for the accounts of Gunlogson and Šafářová. First, our system does not preclude negative responses to rising declaratives. However, more work is needed to understand how the negative response gets to be interpreted as contesting the radical of the speech act; this constitutes a well-known problem for all proponents of the Performative Hypothesis. Second, we derive bias from the core principles of the logic of assertion. Third, the response-eliciting behavior of rising declaratives is shown to follow from general properties of conversation – we rely on the intuitive idea that certain proposals to add something to the common ground require agreement (rising declaratives), while others are automatically accepted due to their self-verifying nature (falling declaratives).

#### 4 Conclusion and Outlook

We proposed a new analysis of rising declaratives in English. Its core ingredients are the ideas that the speech act operator ASSERT is part of the structure of the sentence (the Performative Hypothesis) and that it is parameterized. One of the parameters of ASSERT is the agent/authority of the speech act. We proposed that rising intonation conditions this parameter to be second person, i.e. rising intonation 'inflects the performative prefix'. Falling intonation, on the other hand, lets the parameter be resolved to default first person. We have shown that an assortment of facts follows from this assumption once we couple it with the standard logic of assertion; we have also shown it to be immune to the main problems of some other approaches. However, since we adopt the Performative Hypothesis, we do inherit some of its issues, e.g. the puzzle of disagreement or negative response. We plan to address these issues at a different occasion.

There is a natural extension of our theory from sentences describing assertions to sentences describing other speech acts. That is, we hypothesize that not only ASSERT but also QUEST and IMP operators are parameterized and some of their parameters can be shifted. This seems desirable, in particular in light of the data in (34) and (35), which need to be explored further.

- (34) A: Are you going home?  
B: Am I going home?  
A: Yes, are you going home?

- (35) A: Open the window!  
 B: Open the window?  
 A: Yes, open the window!

Finally, there is a salient fact concerning rising intonation that our proposal on its own does not account for: rising intonation is a root phenomenon, i.e. its effects cannot be restricted to embedded clauses.

- (36) Mary knows John came ↑  
 ≠ 'Mary knows that you assert that John came'

There is an obvious route that we could take: since we have characterized rising intonation as an operator/modifier on speech acts, we could stipulate that speech acts cannot be embedded. This would require further argumentation.

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