

Three Ways to Avoid Commitments: Declarative Force Modifiers in the Conversational Scoreboard

Sophia Malamud

Language and Linguistics Program
Department of Computer Science
Brandeis University
smalamud@brandeis.edu

Tamina Stephenson

Department of Linguistics
& Department of Philosophy
Yale University
tamina.stephenson@yale.edu

Abstract

We discuss three English markers that modify the force of declarative utterances: reverse-polarity tags (*Tom's here, isn't he?*), same-polarity tags (*Tom's here, is he?*), and rising intonation (*Tom's here?*). The differences among them are brought out in dialogues with taste predicates (*tasty, attractive*) and vague scalar predicates applied to borderline cases (*red* for an orange-red object), with consequences for the correct model of conversation, common ground, and speech acts. Our proposal involves a conversational “scoreboard” that allows speakers to make strong or tentative commitments, propose changes or raise expectations about the Common Ground, strongly or tentatively propose issues to be resolved, and hazard guesses about other participants’ beliefs. This model allows for distinctions among speech acts that are subtle and fine-grained enough to account for the behavior of these three markers.

1 The Three Markers

Three markers that modify the force of declarative utterances – reverse-polarity tag questions [**RP-tags**] (1a), same-polarity tag questions [**SP-tags**] (1b), and non-interrogative rising intonation [**NI-rise**] (1c) – all seem to indicate some kind of uncertainty of the speaker, and/or a desire to seek confirmation from the addressee. Rising intonation is indicated graphically with a question mark; we term the associated declarative utterance the anchor.¹ Rising intonation on syntactically declarative sentences

¹Our examples of RP-tags are all intended to be “post-nuclear” in the sense of Ladd (1981) – that is, they are part of the same intonational phrase as the sentence they are tagged

(1c) have been extensively discussed in Gunlogson (2003), among others.

- (1) a. [**RP-tag**] Sue likes licorice, doesn't she?
- b. [**SP-tag**] Sue likes licorice, does she?
- c. [**NI-rise**] Sue likes licorice?

Although we focus on syntactically declarative sentences, these markers are sometimes possible in non-declaratives as well, and it is our hope that our analysis could be generalized to cover those cases.

2 Taste Predicates

Contexts involving taste predicates such as *tasty* and *attractive* are useful because they provide a more clear-cut way to distinguish which participant(s) a particular discourse commitment belongs to. As observed by Lasnik (2005) and others, when X asserts or otherwise presents themselves as believing, e.g., that Y is attractive, this typically conveys that Y is attractive as judged by X, but not necessarily that Y is attractive as judged by other participants in the conversation. In other words, if X is committed to *p* (where *p* contains a taste predicate), this is roughly equivalent to X being committed to ‘*p* as judged by X.’ Stephenson (2007) sketches a pragmatic account of assertion and Common Ground built largely around this observation, which we will be adopting in part.

For the moment, though, the relevant point is this: when the content conveyed with a taste predicate

onto. The entire utterance that includes the tag has a final-rising tune; the rise is on the tag itself. Some of what we say may apply to “nuclear” tags as well, but we leave that for further work. We are also not considering here the “falling tune” tag questions discussed by Reese & Asher (2008).

seems to involve the judgment of one particular participant, this should typically mean that a commitment of that participant is involved, possibly indirectly.² We begin, then, by setting up contexts where the relevant judgments are only the speaker's, only the hearer's, or both speaker and hearer's, and show how this changes the felicity pattern of tags and NI-rises.

In (2), B's judgment of attractiveness is at issue and A's is not. Here an RP-tag is infelicitous (2a), as is a plain declarative (2d), while an SP-tag or NI-rise is fine (2b, 2c). This suggests that both SP-tags and NI-rises involve commitments of the addressee in some way (still bearing in mind that this involvement might be indirect).

- (2) Context: A and B are gossiping. A doesn't know anything about B's neighbor. B says, blushing, "You've got to see this picture of my new neighbor!" **Without looking**, A replies:

- a. # A: He's attractive, isn't he?
- b. ^{OK} A: He's attractive, is he?
- c. ^{OK} A: He's attractive?
- d. # A: He's attractive.

In (3), both A's and B's judgments are at issue, and they are establishing points of agreement; here an RP-tag or plain declarative is felicitous (3a, 3d), while an SP-tag or NI-rise is not (3b, 3c). This suggests that RP-tags and plain declaratives involve both speaker and hearer commitments in some way.

- (3) Context: A and B are discussing various traits of their mutual acquaintances. B says, "I think Bill, more than anything else, is just a really nice guy." A replies:

- a. ^{OK} A: (But) he's attractive too, isn't he?
- b. # A: He's attractive too, is he?
- c. # A: He's attractive too?
- d. ^{OK} A: He's attractive too.

Finally, in (4), only A's judgment is at issue, but A is unsure what sort of judgment is called for. Here an NI-rise is felicitous (4c) while tags are not (4a, 4b).

²Note that this principle does not apply to most examples of "exocentric" readings of taste predicates discussed in the literature, since those involve a relevant judge who is a third party outside the conversation.

A plain declarative (4d) is fine but doesn't express A's intended uncertainty (indicated by ^{OK□}). This suggests that NI-rises and plain declaratives both involve speaker commitments in some way.

- (4) Context: B hasn't met A's neighbor, and asks, "What do you think of your new neighbor?" A isn't sure if B wants to know about neighborliness or suitability for dating. A replies:

- a. # A: He's attractive, isn't he?
- b. # A: He's attractive, is he?
- c. ^{OK} A: He's attractive?
- d. ^{OK□} A: He's attractive.

3 Vague Scalar Predicates

Vague scalar predicates such as *tall* or *red* are useful because they allow for cases where discourse commitments pertain to the appropriate standards of application rather than to objective facts (see, e.g., Barker, 2002). In some situations, making sure two people apply the same standard is more important than what exactly that standard is. In that case, a speaker may be free to commit to a standard with conviction or to tentatively suggest one and check that the hearer approves before committing to it. This seems to be the case in (5), for example, where A and B are trying to agree on a classification for a borderline case. Here an RP-tag or NI-rise is fine; the RP-tag suggests a higher degree of confidence about the judgment (5a) than the NI-rise (5c), but both indicate some lack of confidence. A plain declarative is fine but indicates essentially total confidence. An SP-tag is not felicitous (5b). This crucially differs from the otherwise similar taste example in (3), where only the RP-tag was felicitous (3a).

- (5) Context: A and B are sorting paint cans in a store into a "red" bin and an "orange" bin. B points to orangish-red paint and says, "What color would you say this is?" A replies:

- a. ^{OK} A: It's red, isn't it?
- b. # A: It's red, is it?
- c. ^{OK} A: It's red?
- d. ^{OK□} A: It's red.

The pattern of felicity for the three markers is summarized in Table 1.

| Table 1: Summary | RP | SP | Nlr | decl |
|---|----|----|-----|------|
| (2): uninformed speaker, innuendo about hearer | # | OK | OK | # |
| (3): expressing opinion, seeking agreement | OK | # | # | OK |
| (4): expressing opinion, uncertain re: speech act | # | # | OK | OK□ |
| (5): uncertain judgment on borderline case | OK | # | OK | OK□ |

4 Pragmatic Background

We build on prior work in the semantics and pragmatics of dialogue, taste predicates, and vague scalar predicates.

4.1 The Conversational Scoreboard

Our point of departure is the model presented by Farkas & Bruce (2010) (henceforth **F&B**), building on Hamblin (1971), Gunlogson (2003), and others. F&B’s representation of the “conversational state” (or Lewis-style “scoreboard”) includes the elements in (6).

- (6) a. DC_X : for each participant X, X’s public discourse commitments.
- b. Table: stack of propositions/questions to be resolved (the top issue first).
- c. Common Ground (CG): the set of propositions in the Stalnakerian CG.
- d. Projected CGs (F&B’s “Projected Set”): a set of potential CGs giving possible resolution(s) of the issue on the Table in the expected next stage of the conversation.

In F&B’s system, conversational moves (including assertions or questions) are distinguished by where their associated propositions are added in the scoreboard. For example, if A asserts a proposition p , then p is added (along with any presuppositions it carries) to DC_A , to the top of the Table, and to each Projected CG (7.ii). If B accepts the assertion (a separate move), this removes p from the Table and adds it to the CG (7.iii).³

³We assume (following F&B) that when p is added to the CG, it is also removed from any individual commitment sets; this is to avoid redundancy, since common ground propositions are public commitments of every participant in the conversation.

(7) A asserts: *The king is here.*

| | (i) Previous state | (ii) A asserts | (iii) B accepts |
|--------|-----------------------|---|---|
| DC_A | $\{r\}$ | $\{r, \exists \text{ king, king is here}\}$ | $\{r\}$ |
| DC_B | $\{\}$ | $\{\}$ | $\{\}$ |
| Table | $\langle \rangle$ | $\langle \text{king is here} \rangle$ | $\langle \rangle$ |
| CG | $\{q\}$ | $\{q\}$ | $\{q, \exists \text{ king, king is here}\}$ |
| PS | $\{\{q\}\}$ | $\{\{q, \exists \text{ king, king is here}\}\}$ | $\{\{q, \exists \text{ king, king is here}\}\}$ |

In contrast, the corresponding yes/no question creates projected CGs containing p as well as ones containing $\neg p$ (8.i).

(8) A asks: *Is the king here?* B answers: *Yes.*

| | (i) A asks | (ii) B answers | (iii) A accepts |
|--------|--|---|---|
| DC_A | $\{r, \exists \text{ king}\}$ | $\{r\}$ | $\{r\}$ |
| DC_B | $\{\}$ | $\{\text{king is here}\}$ | $\{\}$ |
| Table | $\langle \text{king is here} \rangle$ | $\langle \text{king is here} \rangle$ | $\langle \rangle$ |
| CG | $\{q\}$ | $\{q, \exists \text{ king}\}$ | $\{q, \exists \text{ king, king is here}\}$ |
| PS | $\{\{q, \exists \text{ king, king is here}\}, \{q, \exists \text{ king, king is not here}\}\}$ | $\{\{q, \exists \text{ king, king is here}\}\}$ | $\{\{q, \exists \text{ king, king is here}\}\}$ |

Note that presuppositions are handled slightly differently in an unsolicited assertion than in an equivalent *yes* answer to a polar question: in the case of an assertion (7.ii), the speaker making the assertion (here, A) is the first one to introduce the presupposition that there is a king, and so this presupposition is only placed in the projected CG at this stage. In contrast, in the case of an answer (8.ii), the person who previously asked the question (here, A) already introduced the presupposition into the projected CG. By answering A’s question, B simultaneously makes an assertion and accepts A’s move, and thus the presupposition is placed directly into the CG at this stage. The system includes two ways for information to make it to the Common Ground. The first way is via

the projected CG. However, there is a second way – when both (all) participants are publicly committed to a proposition, this proposition is added to the CG.

4.2 Taste and Standards

We assume the view of assertion of taste judgments in Stephenson (2007), adapted to F&B’s system, where such assertion is relative to a judge. For present purposes, this means that if a statement of taste, e.g., *the cake is tasty*, is added to a speaker A’s public commitments, this is equivalent (only) to A having the commitment that the cake tastes good to A; however, if ‘the cake is tasty’ is added to the Common Ground, then this is equivalent to making it common ground that the cake tastes good to the whole group of participants in the conversation.

Turning to vague scalar predicates, we follow Barker (2002, p. 4) in that “part of the ignorance associated with a use of a vague predicate is uncertainty about the applicability of a word.” Scalar predicates like *tall* need a contextual standard to be fully interpreted. The lexicon includes restrictions on standards, which are based on scalar properties – e.g., “if John is taller than Bill, then we disallow standards that count Bill as tall but not John.”

For the sake of presentation, we will distinguish a set of Common Standards (CS) as a separate part of the scoreboard. The CS includes the standards compatible with what has been accepted for the purpose of conversation. Thus, if ‘John is tall’ is in the Common Ground, this indicates that the threshold for tallness is no higher than John’s height (Barker, 2002).

In an empty context, then, all sorts of standards are possible, provided they meet lexical restrictions. If someone asserts *John is tall* in a context where we know John is 6 feet tall, then we add the speaker’s commitment to a standard that does not exceed 6 feet. When the hearer(s) accept this conversational move, all standards are removed from the CS that don’t count John as tall. (Then, because of the lexical restrictions, anyone taller than John will automatically count as tall, too.) As Barker (2002) discusses, an assertion like *John is tall* can target the “factual” common ground or the standards in place, or both.

5 A Modification

The F&B framework is not fine-grained enough to capture the behavior of the three markers. Thus, we suggest a modification: in addition to projected CGs, we posit “projected” versions of the other parts of the conversational state. Unlike F&B’s system, this allows for moves that give tentative commitments (by adding propositions to the speaker’s projected, rather than present, commitments), or to offer the speaker’s best guess of commitments of other participants (by adding to others’ projected commitment sets). It also allows speakers to tentatively raise issues (by adding them to the projected Table).

In the modified system, the effect of an assertion that *p* is given in (9), without the move whereby the hearer(s) accept the assertion.

(9) A asserts *p* (no vague predicates):

| Current | Projected |
|--|---|
| CG {...} | CG* {{...}, p}, ..., {...}, p}} |
| (proposes to add <i>p</i> to the CG) | |
| CS {...} | CS* {...} |
| (no change to common standards) | |
| DC _A {..., <i>p</i> } | DC _A * {{...}, p}, ..., {...}, p}} |
| (adds <i>p</i> to A’s current & projected commitments) | |
| DC _B {...} | DC _B * {{...}, ..., {...}} |
| DC _C {...} | DC _C * {{...}, ..., {...}} |
| (no change to B or C’s commitments) | |
| Table ⟨ <i>p</i> , ...⟩ | Table* {⟨...⟩, ⟨...⟩, ..., ⟨...⟩} |
| (adds <i>p</i> to the top of table; proposes that it be resolved) | |

6 RP-tags

At first glance, it seems that RP-tags can be analyzed straightforwardly in F&B’s system. One might suggest that an assertion with an RP-tag differs from a normal assertion only in that *p* is not added to the speaker commitments.

However, in conversations with more than two participants a deficiency emerges. Consider (10). (Let *p* = *it’s raining*.) In this scenario, C is contradicting both A and B, rather than just B – that is, both A and B are on the hook, committed to *p*.

(10) A: It's raining, isn't it?

B: Yes.

C: No it isn't!

In other words, when using an RP-tag, a speaker is not directly committing to p , but is indicating that if p is confirmed, she will share responsibility for it. Thus, the unmodified F&B system which does not commit the utterer of the RP-tag to the tagged proposition is insufficient to capture this scenario.

In our richer system, we can model RP-tags by adding p to the speaker's **projected** commitments rather than their current commitments. This would mean that if B answers *Yes*, then both A and B are publicly committed to p . Since p is added to the CG anyway, this would yield the same results as the F&B system in a simple case; but now we can capture the utterer's commitments in a conversation with more than two participants, such as (10).

The modified system also captures the distinct behavior of RP-tags in (2-5). In (2), the speaker is uninformed – thus she cannot commit to a judgment of taste, even tentatively. Thus, the move whereby the speaker projects a commitment to the anchor proposition is infelicitous. Next, consider the contrast between two instances of expressing an opinion of taste, one where the speaker is additionally seeking agreement and the marker is appropriate (3), and another where the speaker is uncertain about the whole speech act, and the marker is inappropriate (4). Since the anchor is added to the speaker's projected commitments, in both cases the speaker succeeds in expressing her opinion. By placing this proposition involving a predicate of taste on the Table and into the projected CG, she also invites the hearer to express her opinion (3). However, in a situation where the hearer's opinion is not at stake and cannot be solicited, as in (4), the marker is infelicitous.

Finally, consider the effect RP-tagged vague predicates have on the standards. The utterance in (5) puts the proposition 'it's red' on the Table, in the projected CGs, and revises the standard of redness in the projected CSs, but instead of committing to all of this, 'it's red' (and the corresponding standard) is added to the projected commitments. An obvious reason for this failure to commit to one's own proposal is if the speaker does not want to commit to

a standard unless that standard is acceptable to the hearer as well. This is similar to what would happen as a result of an RP-tagged "factual" utterance – failure to fully commit in this case would cause the hearer to infer that the speaker is uncertain about the content of the projected commitment. With the vague predicates, there is a salient source of this uncertainty – the standard. Thus, the hearer infers that the speaker is uncertain about the standard.

7 SP-tags

We propose that A asserting p with an SP-tag makes no change to A's present or projected commitments, or present or projected CGs, but adds p to B's projected commitments. This signals that A is making a guess as to B's beliefs. If B accepts this move, p is added to B's commitments. Since an SP-tag projects a commitment of the addressee, rather than the speaker, this predicts that SP-tags are acceptable when only the hearer's judgment is at issue (2b), but not when the speaker is expressing her own judgment and/or seeking agreement (3b, 4b, 5b).

The contrast in (3a-3b) is especially revealing. The context calls for A to commit to a judgment of personal taste, which B may agree or disagree with. In our modified F&B system, the dependence of the taste predicates on the judge parameter (Stephenson, 2007) will in effect set that parameter to be the "owner" of the corresponding part of the scoreboard (X for DC_X , and the group of participants collectively for the CG). This predicts that an RP-tag (3a) serves both to assert A's opinion and at the same time to solicit B's by adding 'Bill is attractive' to the projected CG. In contrast, the SP tag cannot serve to express A's own opinion, and thus is infelicitous.

Similarly, A's judgment of taste is called for in (4), and A's judgment on a standard-dependent borderline case is required in (5) – in both of these cases, A's commitments fail to be changed, and the SP-tagged utterance is infelicitous.

8 NI-rises

We propose that if A utters p with an NI-rise, the present conversational state does not change, but p is added to A's **projected** commitment set and to the **projected** Table. If B accepts this, p is added to A's

present commitment set and to the Table. This is almost the effect that would have arisen from asserting p – the difference is only that a plain assertion adds p to the projected CGs; here, A suggests no potential resolutions for the issue on the projected Table, but gives a clue that she'd be willing to go along with adding p to the CG, since she adds p to her projected commitments (Compare this to the proposal in Nilsenová (2002), in which rising intonation assigns the role of Initiator of the claim to the utterer, but Dominance in the power to add things to the CG to the hearer.⁴)

On our view, roughly, the speaker is seeking approval to make the move that would have been made if the rising intonation were absent. Thus NI-rises are possible whenever the speaker isn't sure if a plain assertion is appropriate. For example, in (2), A infers that the neighbor is attractive only indirectly; and in (4), A is unsure whether her opinion is called for; and in (5c), A is not confident about her judgment. In contrast, in (3), a plain assertion (3d) is clearly warranted, since it is established that **any** opinion of A is called for (cf. 4), and A has privileged access to her own taste (Lasersohn 2005).

The appropriateness of an NI-rise in the application of a vague predicate to a borderline case (5c) supports a modification of the basic F&B system, since it cannot be modeled in that system. The effect of an NI-rise on the scoreboard for F&B does not involve any change to the projected CG, and thus, we assume, to the projected standards. Yet, the utterance in (5c) is interpreted as a tentative (pending hearer approval) suggestion to revise the standard of redness to include the borderline paint.

Using projected commitments in our enriched system, we can model this effect by manipulating the standards in a more indirect way than the projected CS. When a speaker says *John is tall?*, this expresses

⁴The approach is couched in the framework of Merin (1994): the rise affects parameters of a bargaining game between hearer and speaker. A basic assumption in this approach is that the preferences of the two players are opposed – if one prefers to add p to the CG, the other prefers to add $\neg p$. We don't share "the intuition that if agents' preferences were not opposed, there would be no issue to discuss." Moreover, this assumption may not be "relatively harmless" in that it is not clear how to generalize this framework to conversations involving more than two agents. A thorough comparison of the two approaches is outside the scope of this paper.

her projected commitment to a standard that makes John, in this context, count as tall. If the hearer confirms, both are now publicly committed to such a standard. As a result of these public commitments, the standard in the CS is revised.

The proposed analysis of the three markers extends naturally to their other uses with declaratives. Šafářová (2007) discusses three different interpretations for NI-rises: first, those that do not result in a commitment from either the speaker or the addressee, such as (11).

(11) (Šafářová, 2007)

- a. You're leaving for vacation today?
- b. Speaker B: John has to leave early.
Speaker A: He'll miss the party then?

Our framework captures such interpretations – by expressing a projected, rather than present commitment of the speaker, the utterance conveys a tentative bias towards resolving the issue, but fails to commit the speaker or the addressee. The origin of the bias is often an indirect inference from world knowledge and prior information, as in (11).

Second, Šafářová gives examples that result in a speaker commitment (e.g., when the speaker conveys new information but wants to keep contact with the addressee), as in (12).

(12) (Pierrehumbert & Hirschberg, 1990, p. 290)
(to a receptionist) Hi, my name is Mark Liberman?

On our analysis, failure to fully commit to information on which the speaker is obviously an authority tells the hearer that there is another reason for the speaker's tentativeness. A hearer's confirming response to this utterance would yield almost the same result as a speaker's plain assertion – thus, the hearer infers that the speaker is unsure about the speech act itself, rather than about its content. As a result, the speaker succeeds in conveying new information (e.g., that his name is Mark Liberman).

Finally, as Gunlogson (2003) points out, some NI-rises are used when there is a previous commitment from the addressee, as in the case of the addressee's assertion (13) or in the case of double-checking a presupposition (14).

(13) (Šafářová, 2007)

B: That copier is broken.

A: It is? Thanks, I'll use a different one.

(14) B: John's picking up his sister at the airport.

A: John has a sister?

We treat the case in (13) as very similar to (11) – the speaker tentatively raises the issue and expresses a bias towards it. In light of the hearer's prior assertion of this information, this serves to keep the issue open for the moment (rather than adding it to the Common Ground). An immediate subsequent acceptance signaled by A in (13) serves to then resolve the issue, and add the information to the CG. The NI-rise in this case serves to delay the removal of the issue from the Table, demanding the hearer's attention during that time, and thus achieves its purpose of keeping in contact with the addressee.

In contrast, in (14) A's NI-rise double-checks B's presupposition – something that never made it to the Table prior to A's utterance. If followed by acceptance, this information is added to the CG; the utterance then simply serves to indicate that this is new (and perhaps unexpected) information for A, and thus worth putting on the Table before it joins the CG. However, such an NI-rise can also serve to subtly hint to B that A has information that makes her doubt that John has a sister, or even that John does not have a sister at all. In this case the NI-rise may serve to prevent this information from ever reaching the Common Ground.

Šafářová (2007, p. 6) observes that “all these types of rising declaratives usually elicit a response from the addressee or give the impression of the response being welcome.” We explain this effect by the presence of the associated proposition on the projected Table, which indicates that the speaker would like to make this an open issue, to be resolved.

Note that NI-rises can also occur in non-declarative cases such as (15). We assume that a normal exclamation of *Congratulations!* adds to the speaker's commitment set something like “the speaker joins the hearer in feeling joy.” Rising intonation adds this to the speaker's projected commitment set instead (e.g., if the speaker is not sure whether the addressee is joyful).

(15) A: I'm pregnant with triplets.

B: Congratulations?

9 Discussion

Now we'll turn to a brief comparison of our view with some previous work on rising intonation and/or tag questions.

9.1 Comparison with Gunlogson (2003)

Gunlogson's key claim is that rising intonation shifts the commitment from the speaker to the hearer: that is, while a normal assertion of p commits the speaker (but not the hearer) to p , an assertion of p with rising intonation does the reverse, committing the hearer but not the speaker to p . This is based on the generalization she terms the “Contextual Bias Condition,” that NI-rises can only be used as questions in contexts where the addressee is already publicly committed to the proposition expressed (as in, e.g., 14).

While our view owes its key insight to Gunlogson, we have shown that her claim is too strong. On the one hand, there are cases of NI-rise where the speaker essentially remains committed to the proposition – for example, in (4c), the speaker (A) is committed to the new neighbor being attractive, and the hearer (B) is not. Conversely, in (5c), the speaker (A) does not assume or expect the hearer (B) to be committed to counting the paint as red rather than orange, and in fact the use of the rising intonation indicates precisely the fact that the standard is uncertain.

These cases come on the heels of many other counterexamples that have been pointed out to Gunlogson's commitment-shift generalization (see, e.g. Šafářová, 2007). Furthermore, Gunlogson's view as it stands (that NI-rises contribute commitments to the hearer's present commitment set) would not account for the generalization even if it were true. In cases such as (13, 14), by the time the speaker utters the NI-rise, the addressee's commitment set already includes the proposition associated with the NI-rise; thus, on Gunlogson's proposal, the utterance of the NI-rise would not change the conversational scoreboard at all: p is already in the hearer's commitment set.

We suggest that the seeming commitment shift is an illusion, which has two sources, corresponding to the two additions the NI-rise makes to the scoreboard: p , when uttered with a rise, is added to speaker's (A's) projected commitment set and to the projected Table.

First, A's projected commitment arises from an inference based on a prior state of the scoreboard. This inference can rely on the hearer's (B's) prior commitment to p , especially in contexts where standards of evidence for assertions are high.⁵ Alternatively, this inference can arise indirectly from information in the CG, as in (2c). We leave the details of this variation of the "Contextual Bias Condition" to future work.

A second way for the illusion of hearer commitment to arise is via the projected Table. This indicates that the expected next step is for B to make a move that puts p on the Table, and when this happens, A will become committed to p . There are two ways in which B's move can put p on the table. One is for B to show approval of A's move; the conversation will go on as if A had asserted p (see the note above regarding the source of A's projected commitment). Another way B can put p on the Table is by asserting p herself; A's projected commitment to p becomes an automatic acceptance of B's assertion. Note that, under F&B's assumptions that we borrow, B **cannot** assert *not- p* as an expected next move, since this would put *not- p* on the Table rather than p . In principle, B could also respond by asking a question whether p , but this will generally be ruled out when A has already indicated uncertainty and/or bias about the answer.

When A is not in a position to assert p , the NI-rise puts the hearer in a position where committing to p is the only expected way to continue the conversation. In this case, in order to felicitously utter p with an NI-rise, the original speaker (A) must have some reason to believe (or at least plausibly pretend to believe) that B will be willing to commit to p .

⁵For instance, as a referee points out, in a criminal court it is typically infelicitous for the prosecuting attorney cross-examining the defendant to say *You committed the crime?* Without prior context, this communicates the assumption that the defendant already confessed her guilt. We assume that the court context places the bar very high: the speaker must have a **very good** reason to believe that prior context supports p .

This could be for a number of reasons: for example, because A thinks that B believes p ⁵, because A thinks that B has already implied p (e.g., 2c), because B would accept p on the authority of A's projected commitment (e.g., 4c), or even because A thinks that B will be willing to accept a low standard of certainty for her commitments (e.g., 5c).

9.2 Comparison with Beyssade & Marandin (2006)

Building on the work of Ginzburg (1996, 1997), Beyssade & Marandin (2006) (henceforth **B&M**) propose an analysis for a range of speech acts, including French confirmation requests, which they translate using RP-tags. Each participant has a representation of conversational context, termed the Discourse Game Board (DMG), which she updates. The relevant parts of the DMG, as used by B&M, are the Shared Ground set (SG) for factual commitments, and the Question Under Discussion set (QUD), tracking commitments to issues to be resolved. B&M add a new part representing the demands that a move places on the hearer: the Call on Addressee (CoA). In B&M's framework, an assertion that p updates the speaker's SG, indicating a public commitment to p , and calls on the hearer to do the same. Similarly, a question q updates both participants' QUD, indicating speaker commitment to the issue q and calling on the hearer to also commit to the issue.

A confirmation request involving a proposition p adds p to the speaker's SG while calling on the hearer to add the issue whether p to her QUD. Adopting this as an analysis of RP-tags successfully accounts for their behavior. As a reviewer points out, this framework is simpler than the one we use. In fact, it is too simple to capture the fine-grained distinctions between speech acts we consider.

Take the NI-rise. B&M note its similarity to questions and to the French confirmation requests. It seems fair to represent this question-like effect as a CoA to add the issue whether p to the hearer's QUD. For the rest of the DGB, we have four options.

1. Leave the speaker's SG and QUD unchanged. This does not capture the fact that NI-rises involve a tentative commitment of the speaker (3c). In effect, this presents an NI-rise as being like a polar ques-

tion, but without speaker commitment to the issue.

2. Update the speaker's QUD with p . This makes NI-rises identical to neutral polar questions. Yet, as B&M note, the two constructions differ.

3. Update the speaker's SG with p . This makes NI-rises identical to RP-tags, contrary to the facts observed in (2-5).

4. Update both SG and QUD of the speaker with p – that, in fact, was Ginzburg's original proposal for the effect of a plain assertion, using QUD in the same way in which we use the Table. In contrast, B&M represent the raising of issues as a call to add them to the hearer's QUD. Thus, we are free to use the speaker's QUD to essentially weaken the commitments in her SG, indicating that the issue whether p is still unresolved for the speaker.

However, this fourth option for NI-rises makes wrong predictions in several contexts. In particular, when the speaker is uncertain about the speech act itself (4c), she is, in fact, not committed to resolving the issue whether p , and thus cannot add this issue to her QUD.

The part of the conversational scoreboard that makes the difference in our system, enabling us to model these fine-grained distinctions between speech acts, is the projected speaker commitment set. It allows us to distinguish between full commitments involved in a plain assertion from the tentative commitments involved in NI-rises.

9.3 Comparison with SDRT

Reese & Asher (2008) offer an analysis of RP-tags with falling and rising final tune, couched in the framework of SDRT. In SDRT, speech acts are inferred from the content of utterances and other knowledge using defeasible logic. For Reese & Asher (2008), as for us, the intonational rise is an illocutionary operator. The rise entails that the speaker believes the core content of the associated proposition to be possible.⁶

⁶The analysis of rising intonation in Šafářová (2007) also involves a modal operator akin to *It might be the case that*, but a propositional, rather than illocutionary one. Space does not allow a full discussion, but we argue that this is not fine-grained enough to capture the different felicity patterns of the three markers; and that the effects of these markers are not truth-conditional, but illocutionary in nature.

Thus, in an RP-tag, the anchor p is an assertion, which defeasibly means that A wants B to believe p , while the rising tag defeasibly means that A wants B to believe that $\Diamond\neg p$ (thereby implicating $\Diamond p$). One of the contradictory intentions must cancel the other. If the assertion is canceled, the tag is interpreted as a confirmation question: A believes p is possible, and asks B to confirm. If, however, the effect of the rise is canceled, the assertion persists, the tag is interpreted as an acknowledgment question, and B infers that the rise is there for some other reason, such as politeness.

This account makes wrong predictions: for example, in contexts where the effect of the rise is canceled, RP-tags should pattern with plain declaratives. This is falsified by (4) – A cannot be asking for confirmation, since she is informed on the matter, and B isn't. Yet, the RP-tag is infelicitous, while the declarative is acceptable.

Reese & Asher (2008) do not address SP-tags; but their framework predicts them to be felicitous whenever the plain declaratives asserting the anchor are. Since no contradiction exists between p (the anchor) and $\Diamond p$ (the rise on the tag), there is no weakening of the assertion. Thus, contrary to fact, SP-tags should not be possible in (2), where A is not in a position to express her opinion, and should be possible in (3), where she is.

9.4 Future work

Two constructions closely related to the ones considered here seem to be the natural testing ground for the present proposal. First, an investigation of the markers modifying the force of imperatives (16, 17) can contribute to our understanding of the semantics and pragmatics of that mood.

- (16) Context: B and A are children playing make-believe games. A wants to play along but is unsure whether she's playing correctly.

B: Let's play queen and servant. You can be the queen and I'll be the servant. You sit on your throne here and tell me what to do.

A: Uh, okay, um ... make me some toast?

- (17) a. Pass the salt, will you? ⁷
 b. Pass the salt, won't you?

Second, in this study we avoided considering a particular analysis of the rising intonation on tag questions, and specifically, committing to a view (espoused by Reese & Asher (2008), among others) that this intonation is the same marker as the NI-rise. As Reese & Asher (2008) and others point out, utterances such as (18) indicate a much stronger bias towards the anchor proposition than the rising RP-tags such as (1a), and ask for hearers' acknowledgment rather than confirmation. The stronger bias suggests that the proposition becomes part of the speaker's present, rather than projected, commitments in this case, yet this speech act differs from a plain declarative.

- (18) Sue likes licorice, doesn't she ↓

A consideration of the falling-final-tune tags (18) might be the first step towards separating the effects of intonation from those of the tag itself, and towards a compositional account of speech act modifiers.

10 Conclusions

We have presented a felicity pattern which brings out a commitment scale among declarative forms, from plain declaratives (most committed), to RP-tags (committed enough to project a CG), to NI-rises (projected speaker commitment), to SP-tags (no speaker commitment; projected hearer commitment instead). The pattern motivates a model of conversation which makes fine-grained distinctions among speech acts.

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⁷Note that in (17), the auxiliary must be *will* and not *do*, thus, these might be distinct from the tags we discussed so far.