



“Won’t you?” reverse-polarity question tags in American English as a window into the semantics-pragmatics interface

Tatjana Scheffler¹ · Sophia A. Malamud²

Accepted: 21 February 2023
© The Author(s) 2023

Abstract

We model the conventional meaning of utterances that combine two distinct clause types: a (positive) declarative or imperative (in rare cases, interrogative) anchor and a (negative) interrogative tag, such as *won’t you?*. We argue that such utterances express a single speech act, and in fact, a single conventional update of the conversational scoreboard. The proposed model of this effect is a straightforward extension of prior proposals for the semantics of declaratives, imperatives, and preposed-negation interrogatives. Ours is the first unified account of these phenomena that addresses the sentential force of these utterances and outlines how the speech act effects arise from the scoreboard update and contextual factors. We enrich the conversational scoreboard, interpreted as a model of sentential force, to include graded commitments and non-at-issue meanings. A consequence of our model is that modified utterances can create “blended” speech acts which share some, but not all, properties with the unmodified utterances. The proposal has implications for models of other utterance modifiers, as well as for negative interrogatives and negation in general, and for imperative/jussive constructions.

Keywords Tag questions · Conversational scoreboard · Semantics pragmatics interface · Imperatives · Sentential force · Graded commitments

✉ Tatjana Scheffler
tatjana.scheffler@rub.de
Sophia A. Malamud
smalamud@brandeis.edu

¹ Ruhr University Bochum, Bochum, Germany

² Brandeis University, Waltham, MA, USA

1 Introduction

The relationship between linguistic forms of utterances and the speech acts they express has been the subject of much recent debate. To provide a window into the nature of the semantics-pragmatics interface, we study an utterance modifier which cuts across both clause type and speech act categories, calling for a unified analysis. We look at the negative reverse polarity question tag *won't you?* in American English, which can be attached to declarative or imperative clauses alike (1)–(2). Intuitively, the speaker seems to be uttering a kind of confirmation request in both cases.

- (1) You'll take care of it, won't you? [OpenSubtitles2016, ex.#928796]
 (2) Excuse us, won't you? [BYU SOAP Corpus, GH 2003-02-14]

We start from two empirical observations about *won't you?*: that a tagged utterance expresses a single speech act, and that for some utterances this single effect is the same, whether it is produced by reverse-polarity (RP) tagged declarative or tagged imperative utterances (Sect. 2). We follow these with two further observations regarding the RP-tagged declaratives: that they can express modified assertions or modified directives, and that in the former use they express higher levels of commitment and place different restrictions on their context of use than related constructions, such as preposed-negation questions (PrepNegQs). These observations lead us to investigate how to bridge the gap from the semantics of a sentence to the speech act realized by its utterance.

We follow the line of research that divides this computation into two separate stages, in which the first step is determining the sentential force of the utterance, a meaning at the semantics-pragmatics interface which is closely tied to linguistic form, followed by the second step, a pragmatic computation to determine the corresponding speech act (e.g. Chierchia & McConnell-Ginet, 2000; Murray & Starr, 2021).

The illocutionary force (speech act) results from the sentential force via pragmatic reasoning that takes into account speakers' aims and contextual factors. Chierchia and McConnell-Ginet (2000) define sentential force as “what the grammar assigns to the sentence to indicate how that content is conventionally presented,” the semantic correlate of (declarative, interrogative, or imperative, a.o.) sentence type. As noted by many scholars (e.g. Levinson, 1983), the same sentence can be used to perform many illocutionary acts, at times several illocutionary acts at the same time. For instance, the utterance in (3) is compatible with the speech act of assertion, defined by Searle (1969) as the speech act type whose “point or purpose [...] is to commit the speaker [...] to something's being the case, to the truth of the expressed proposition”. It is also compatible with a directive speech act, whose “illocutionary point [...] consists in the fact that they are attempts [...] by the speaker to get the hearer to do something.” It is not compatible with the act of wishing abstractly that something may happen. In contrast, the utterance in (4) could be used to convey a directive speech act or a wish for the addressee to have a good time, but not an assertion.

- (3) You will help her.
 (4) Go have an adventure!

In addition, it is often explicitly or implicitly assumed that speech acts fall into several clearly distinguished categories, and this is sometimes encoded in covert speech act operators that drive the semantic/pragmatic computation (e.g. Haegeman, 2004; Frey, 2012; Krifka, 2014, 2015; Korotkova, 2015). In the simplest case, the covert speech act operator is associated with the syntactic clause type of its sentence as a Force operator: declarative sentences are then taken to encode assertions, interrogative sentences correspond to queries, etc. More complex theories of the semantics-pragmatics interface associate individual aspects of speech acts, such as speaker commitment, with specific linguistic forms, including declarative or interrogative clause types, as well as intonation.

This paper develops an account of the semantics-pragmatics interface that falls into the tradition of sentential force followed by a separate pragmatic process to determine the speech act, and where different aspects of sentential force, such as speaker commitments, are expressed by different aspects of linguistic form. This allows us to derive meanings that combine aspects of different speech act types, accounting for utterances that express essentially “hybrid” speech acts. We demonstrate that a syntactic encoding of speech acts is not fine grained enough to capture the semantic flexibility of utterance modifiers such as the one studied here.

Our analysis spells out the semantic components of *won’t you?* utterances and considers these components’ impact on the conversational scoreboard in the Table model of conversational dynamics (Farkas & Bruce, 2010, subsequently, F&B). We analyze *won’t you?* tags as elliptical PrepNegQs, using Romero’s (2015) and Repp’s (2013) FALSUM operator.

Further, we model the contribution of imperative utterances to the scoreboard by adapting Kaufmann’s (2016) proposal to the F&B model. We argue that F&B’s scoreboard is not a model of speech acts, but rather of conventional dynamic semantic effects. We modify and extend the model to propose a unified analysis of the meaning of imperatives and declaratives, and the way that *won’t you?* tags modify it. The tag does this by changing the dynamics of the conversational scoreboard, which represents aspects of meaning closely tied to linguistic form of the utterance, and thereby affecting the pragmatic calculations that use the scoreboard as their starting point. We follow with a sketch of this pragmatic reasoning from conventional meaning to the direct or indirect speech act. Finally, we compare our proposal to previous scholarship on the modeling of tag questions in the conversational scoreboard and on the semantics of clause types.

2 The empirical landscape

In this paper, we specifically investigate the English question tag *won’t you?*, used as a reverse-polarity tag as in (1)–(2).

2.1 Methodology

We start from naturally occurring corpus examples from the BYU corpora of American English: COCA (24 examples; Davies, 2010) and SOAP (190 examples; Davies, 2011), as well as 80 additional examples from the OpenSubtitles2016 corpus (Lison & Tiedemann, 2016).

Our target dialects are US American English ones, including speakers from the North East, Midwest, and California. We do not consider British English dialects. We selected the COCA and SOAP corpora with the aim of having a sufficiently large number of natural examples from contemporary informal speech. Please note that the SOAP corpus consists of transcripts of what the actors actually said, which are presumably more natural than the original scripted dialog. We normed the naturalness of all the OpenSubtitles examples by collecting acceptability ratings from 11 native speakers on a 3-point scale. The acceptability for the examples was at ceiling.¹

While all our examples are based on spoken English, for native speaker annotators the data was presented in written form. The data was separated into the main dataset containing tags, where *won't you?* was separated from its prejacet/anchor with a comma, and a smaller section with independent *Won't you?* utterances, separated from preceding material by a period. An investigation of prosodic properties of such examples lies outside the scope of our paper. We expect, however, that there is considerable correlation between the prosody of the original examples and the transcribers' choice to use a comma or a period. We suspect that the correlation between punctuation and intonation is imperfect, and that punctuation reflects intent (same vs. separate speech act) more than it reflects intonation. Dehé and Braun (2013), as well as Eisenacher (2016) suggest that phrasing is more important than pitch contour in the intonation of tag questions.

Eleven native speaker annotators rated various properties of the examples, including acceptability and aspects of meaning such as desirability or certainty. They also compared tags to modified examples where the tags were replaced by corresponding PrepNegQs, see (5). Five annotators saw the constructed PrepNegQs first, while six saw the original tag data first.

(5) Won't you come sit? [BYU SOAP, AMC 2011-1-31]

Three native speaker annotators trained in pragmatics additionally annotated speech acts, both those that would be expressed by the anchor by itself, and those of the complete tagged utterances.

2.2 The first pattern

The phenomenon consists of four data patterns, which we present in this section.

We start by noting that the effect of the anchor+tag (1) differs markedly from examples like (6), in which the declarative and the question appear as independent utterances.

¹ In the following, we report our native informants' judgments, though according to one reviewer, not all speakers of American English agree with them.

(6) You’ll take care of it. Won’t you?

The most natural analysis of (6) is that the two clauses represent two separate speech acts. In contrast, the RP tag in (1) might represent one or two speech acts. Prior scholars argue for different analyses: thus, Reese and Asher (2007) propose that the declarative anchor and the question tag represent two speech acts, the effect of the second one interacting with that of the first, while Wiltchko et al. (2018) treat the tag as a modifier of the anchor within a single speech act.

We observe that the tag question (1) has the effect of a mitigated (possibly polite) request. This construction is used frequently in English to politely request real-world actions from the hearer. In contrast, (6) invites the inference that the speaker has taken part of their first utterance back. A very strong assertion or order uttered in the first sentence is partially retracted by the speaker after the fact, by adding the second sentence. An order or request uttered in the first sentence, when followed by the separate “Won’t you?” question, conveys uncertainty regarding whether it will be carried out, since the question is a request for explicit commissive confirmation from the hearer, doubling-down on the initial request and indirectly also taking away from the initial authority or certainty behind it.

The difference between the tagged utterance (1) and the separate two-utterance discourse (6) shows that the tag prevents the anchor from realizing the full speech act effects that it would have if it remained untagged. We can see this from the fact that the felicity conditions for the two cases are quite different: (6) is only felicitous if the speaker has a high level of social authority over the hearer, similar to the bare utterance of the anchor without the tag, while (1) is felicitous even if the speaker has no specific authority over the hearer (that is, the speaker can’t make the hearer do anything). We conclude that (1) represents a single modified speech act, while (6) represents two separate ones. It remains to be shown what exactly the contribution of the tag is to the meaning of the entire utterance.

The following naturally occurring examples² demonstrate *won’t you?* utterances which would be infelicitous if replaced by a two-sentence sequence, since it’s odd for the speaker to make the commitment induced by the first sentence:

(7) You’ll have children, won’t you? They make such a difference.

(8) A: Now let’s get up front, huh?

B: You really will let my father go, won’t you?

A: Why would I hurt the old boy [...]?

To figure out what is different about *Won’t you?* as a separate utterance, we searched the BYU SOAP corpus (Davies, 2011). In contrast to the *won’t you?* tag, of which there were 191 examples in the corpus, we found only 6 instances of the separate *Won’t you?* utterances following declaratives, and 3 more with *Won’t you?* doubling the tag.

These rare instances of *Won’t you?* as a separate utterance following up on a declarative statement or declarative request all result in an interpretation wherein the speaker revises their initial speech act:

² Both examples are from the OpenSubtitles corpus (Lison & Tiedemann, 2016).

- (9) EJ: And I trust that you will do what is right to make sure that our children aren't affected by Rafe's recent erratic behavior. Won't you?

[BYU SOAP, DAYS 2011-04-05]

In (9) we can see the speaker begins with a declarative assertion marked with a certainty marker, an epistemic 'I trust'. This speech act is then immediately undermined by the question *Won't you?* which serves as an attempt to extract a promise of compliance from the addressee.

- (10) I will do whatever it takes to beat this, to beat this curse, because you will wait for me. You will. Won't you?

Lucy: Yeah. I – I will wait for you. [BYU SOAP, PC 2003-01-20]

In (10) the prediction that Lucy will wait for the speaker is presented in a factive construction, so the speaker presents himself as initially strongly committed to it. The question *Won't you?* makes that commitment dependent on the hearer's answer.

2.3 The second pattern

Having concluded that *won't you?* is an utterance modifier that affects the kind of speech act realized by the utterance, we must now investigate at which level in the semantic/pragmatic computation the operator comes in to achieve this effect. We observe that the tag *won't you?* cannot apply simply to the proposition denoted by the anchor, since it can occur with types of anchor clauses that do not denote propositions. The imperative anchors in tag questions like (2) may or may not denote propositions. In addition, in corpus data we even find *won't you?* tag questions with interrogative anchors, such as (11) from the SOAP corpus (Davies, 2011). The interrogative anchor in (11) cannot denote a proposition (Groenendijk & Stokhof, 1984; Francez, 2017).

- (11) Why don't you hold me down outside for a moment, won't you?

[BYU SOAP, OLTL 2007]

While the anchor is syntactically interrogative in (11), it does not express a query speech act. The interrogative in the anchor is instead interpreted as a directive, creating the impression that the tag modifies the fully-interpreted indirect speech act of the anchor. The fact that "Why don't you"-questions can be used as indirect directives in English is a matter of linguistic convention ("Why don't you"-questions are a common way of expressing suggestions, advice, or even requests). We thus conclude that the tag *won't you?* comes in at the level of the (conventional) speech act expressed by the anchor to modify it.

As just shown, clause types do not always match the speech act of the anchor (including clauses modified by tags (Holmes, 1984; Heim et al., 2016)). In the case of *won't you?*, the speech act of the utterance is often a kind of directive. Directives with both declarative and imperative anchors are often very similar to each other in terms of the effect of the *won't you?* RP tag. The modified request in (1), repeated here, could also be rephrased using an imperative anchor:

- (12) You'll take care of her, won't you?

(13) Take care of her, won’t you?

A model of discourse that accounts for this pattern must have enough flexibility to encode modifiers like *won’t you?*, whose meaning cuts across clause types and speech acts to create an utterance expressing a blended/hybrid meaning combining elements of different speech acts, such as directive and query.

This is problematic for several types of syntactic approaches to speech acts. Any theory that encodes sentential force (Chierchia & McConnell-Ginet, 2000: 214; Portner, 2004; Murray, 2010; Starr, 2010) via “assert”, “question”, and “direct” operators, cannot account for tag question data, which shows that there are blended/intermediate types of utterances. For instance, the definition of the ASSERT operator in Krifka (2014) and the associated notion of commitment (liability for the truth of the proposition, such as providing evidence for it) provide no way of handling non-assertive speech acts (cf. in contrast, Scheffler, 2008, 2013), or hybrid speech act types.

A more flexible approach, in which syntax constrains aspects of sentential or illocutionary force, without discrete operators determining the total force of a clause, would fare better in this respect, since we would no longer need different versions of the tag for attaching to the different types of clauses in (1, 13), and so would no longer be losing the generality that the same effect is derived in both variants. In this paper, we pursue such an approach, using the conversational scoreboard model (Farkas & Bruce, 2010).

2.4 The third pattern

Declarative *won’t you?*-tagged utterances show an additional ambiguity. In addition to or instead of the modified request reading, some tagged declaratives are understood as true confirmation questions about the speaker’s prediction about the future. The difference is obvious with these examples from the OpenSubtitles corpus (Lison & Tiedemann, 2016).

(14) You will keep an eye on them, won’t you?

(15) Now you’ll sulk, won’t you?

Both sentences have declarative anchors. While (14) can be interpreted as a (polite) request to “keep an eye on them”, (15) cannot be understood as a request. It is clear that sulking is not something a speaker would ever prefer a hearer to do, and thus not something she would request of the hearer. Instead, the anchor contributes the prediction by the speaker that the hearer will be in a bad mood. The tag *won’t you?* acts as a confirmation request to check whether the speaker’s predictions about the hearer’s future actions are true. RP tagged declaratives used as confirmation questions such as *won’t you?*-tagged (15), have been extensively studied (cf. Cattell, 1973; Ladd, 1981; Tottie & Hoffmann, 2006; Dehé & Braun, 2013; Malamud & Stephenson, 2014, among others). The tag matches the anchor in agreement features, but in this case, also in its future tense. The utterance parallels an RP tagged declarative in present tense like:

(16) He’s sulking, isn’t he?

Given this possible interpretation for (15), it becomes clear that (14) can also be interpreted in this way. In addition to the action request reading, (14) has another reading as a confirmational check question, by which the speaker wants to reassure herself of the hearer's future actions: In this case, the speaker checks to confirm whether the hearer will in fact "keep an eye on them", as she predicts. This reading may be more salient if the speaker has no preference over who keeps an eye on them, or whether they are being watched at all.

2.5 The fourth pattern

The fourth and final pattern, like the third one, concerns RP-tagged declaratives, and demonstrates the kind of restrictions such utterances place on their context of use when they are used as modified assertions. In assessing these restrictions, it is useful to compare tagged utterances with a related construction, specifically PrepNegQs. In fact, since negative RP tags look like elliptical preposed negation questions attached to a declarative anchor (as analyzed in Huddleston and Pullum (2002), among others), we expect a large overlap in the use of these two constructions. This is borne out by our corpus data and our own acceptability judgement study, in which 8 native speakers of American English judged 81 declaratives RP-tagged with *won't you?* from the OpenSubtitles corpus Lison and Tiedemann (2016), and parallel preposed-negation question versions of the same sentences. Annotators were asked whether the two versions are essentially synonymous; at least 6 out of the 8 annotators agreed 42% of the time, and at least 5 out of 8 annotators agreed 73% of the time.

However, the remaining examples and inter-annotator variability showed that there are some differences, both in the contexts in which these utterances are acceptable and in the meanings they convey. This is confirmed by native speaker judgements on RP tags that are not *won't you?*. The most revealing contrast emerges in constructed examples based on Frana and Rawlins (2019).

(17) A says "I'm staying home."

B: ✓ Aren't you going out? (Frana & Rawlins, 2019: 75)
 # You're going out, aren't you?
 # You're going out. (Aren't you?)

(18) B sees A wearing make-up and a nice outfit.

B: # Aren't you going out?
 ✓ You're going out, aren't you?
 ✓ You're going out. (Aren't you?)

In (17), the speaker A (say, Alice), utters something that implies (perhaps entails) $\neg p$, where p is the propositional content of the declarative anchor—what Frana and Rawlins (2019) call the contradiction scenario. In this context, as they show, the PrepNegQ is felicitous. However, the corresponding RP-tagged declarative is out. There is a sense that it can only be uttered by someone who didn't hear or is ignoring Alice's statement implying $\neg p$, and so the declarative anchor, even in the presence of

the subsequent tag, is directly contradicting Alice’s utterance. We further note that the same pattern holds in scenarios where Alice doesn’t say anything but there is contextual evidence supporting $\neg p$, e.g., Alice is wearing sweatpants and an old ripped T-shirt.

In contrast, in a scenario in which there is contextual evidence supporting p , the pattern is reversed (18): the PrepNegQ is infelicitous, whereas the RP-tagged declarative is fine.

What (17) demonstrates is that RP-tagged declaratives express a higher level of independent speaker commitment to the anchor proposition p than PrepNegQs do. This is due to the presence of the declarative anchor, and not to the tag, since an independent declarative, optionally followed by an independent elliptical PrepNegQ, patterns with the tagged utterance.

At the same time, (18) shows that PrepNegQs are incompatible with contextual evidence supporting the anchor proposition (as Frana and Rawlins (2019) argue), whereas RP-tagged declaratives (like independent declaratives optionally followed by an independent elliptical PrepNegQ) are compatible with such scenarios.

2.6 The patterns of *won’t you?*

In this section, we have presented the empirical patterns involving *won’t you?* in English. We have described *won’t you?* as a question tag that can attach to anchors of different clause types, in particular imperatives and declaratives. For both types of anchors, *won’t you?* acts as a speech act modifier, the resulting construction is used as a polite request in American English. This usage differs markedly from cases where *won’t you?* is added as a separate, additional question after the completion of the first utterance. We have also observed that *won’t you?* tag questions with declarative anchors allow for another reading which acts not as a request for speaker action, but as a confirmation question modifying an assertion. This reading is similar to general reverse polarity tag questions, and is the only contextually available reading in some cases (15). Finally, we noted that even though syntactically these tags are elliptical preposed negation questions, the tagged utterances differ from PrepNegQs that are not preceded by a declarative clause expressing the prejacent proposition, suggesting that the felicity conditions for the two constructions emerge as a result of pragmatic calculations, rather than being hardwired into the syntactic structure.

In the following, we introduce our analysis of the meaning of this construction in several steps. First, we discuss the semantic components in the next section. We then describe the theoretical approach to pragmatic computations before proposing our model of *won’t you?* and negative RP tags in general and, finally, addressing the mentioned empirical patterns.

3 The model of the semantics-pragmatics interface

We assume that (most) linguistic expressions carry static semantic content, which is eventually used by pragmatic calculations to arrive at a speech act expressed by an utterance. This is mediated by an intermediate dynamic semantic representation

serving as the site of the semantics-pragmatics interface. Following other authors, we continue to call this intermediate level the conversational scoreboard, even though its content is closely tied to aspects of linguistic form (such as clause type and intonation) and it does not represent felicity conditions or other properties of speech acts.

We assume a static semantics of the standard kind: declaratives denote propositions (sets of possible worlds), interrogatives denote questions (sets of propositions), and imperatives denote special kinds of propositions (Schwager, 2006a; Kaufmann, 2012, 2016; see also Condoravdi & Lauer, 2012). In tagged utterances like (1)–(2), as well as in their counterparts in which *Won't you?* occurs as a separate utterance, we propose that *won't you?* is a preposed-negation interrogative clause (with VP ellipsis). The semantics of such clauses has been discussed by Han and Romero (2002), Romero and Han (2004), Romero (2006a, 2015); we adopt the last (2015) version of the analysis.

3.1 Conversational scoreboard

Our point of departure is the model presented by Farkas and Bruce (2010) (henceforth F&B), building on Hamblin (1971), Gunlogson (2003), Ginzburg (2012) and others, and further developed in Farkas and Roelofsen (2017). F&B's representation of the “conversational state” (or Lewis (1979) style “scoreboard”) includes the elements in (19).

(19) Scoreboard components:

- a. DC_X : for each participant X, X's public discourse commitments.
- b. Table: stack of “proposals” or issues to be resolved (the top issue first), where issues are represented as sets of propositions, in which one or more proposition in a proposal may be highlighted³ (made available for future anaphora) (Farkas & Roelofsen, 2017).⁴
The issues remain on the Table only while they have not been resolved yet, in the sense of the propositions entering the CG or the participants agreeing to remove the issue from the Table (cf. Ginzburg, 2012; Roberts, 1996).
- c. Common Ground (CG): the set of propositions that all speakers are publicly committed to.⁵
- d. Projected CGs (F&B's “Projected Set”): a set of potential CGs giving possible resolution(s) of the top issue on the Table in the expected (canonical) next stage of the conversation.

For F&B, the commitment sets and the Table completely determine the other two elements of the scoreboard: the CG consists of propositions that both (all) participants

³ Highlighted propositions will be in **boldface**.

⁴ Below we point out the differences between the Farkas and Roelofsen (2017) proposal we are adopting and the original F&B Table.

⁵ Background assumptions are considered on par with joint commitments by Farkas and Bruce (2010) and are included here, as well.

are committed to, while the projected CG consists of these joint commitments updated with all possible resolutions to the issues on the Table.

However, we need to slightly modify the dynamics of the projected CG, to account for not-at-issue commitments (such as presuppositions to be accommodated), which are not addressed at all in the Farkas and Bruce (2010) model. We need to make our model explicit with regards to the treatment of not-at-issue contributions because some components of the semantics of *won’t you?* utterances are not-at-issue, as will be explained in detail in Sect. 4.

The proper treatment of not-at-issue contributions is not immediately obvious. On the one hand, they are not on the Table, since they do not provide discourse referents for anaphoric elements such as response particles. On the other hand, these not-at-issue contributions do become joint commitments, and thus enter the CG, once the utterance introducing them is accepted into the CG. For example, in the semantics of imperatives Kaufmann (2012) proposes, the presuppositions associated with them must be accepted by the hearer, to ensure the effect of the imperative utterance (see below).

One approach to not-at-issue commitments in a scoreboard model would be to follow Murray (2010), in that novel not-at-issue commitments directly enter the CG. However, the CG is generally taken not as an independent component of the scoreboard, but rather as the intersection of the public commitments of the interlocutors. Directly modifying it would mean that one speaker’s utterance has the power to publicly commit another speaker to something, which goes directly against the main idea of the F&B model, in which utterances are mere proposals to change the CG.

We propose a different approach, in which the projected CG consists of the existing CG updated with all possible resolutions to the issues on the Table, plus the not-at-issue commitments not already in the CG that are part of the current utterance. This preserves the basic idea that each speaker can only change those portions of the scoreboard over which they hold “ownership”, while still ensuring that not-at-issue commitments such as conventional implicatures or accommodated presuppositions end up in the CG.

For example, “Pat is a climber” is a novel not-at-issue commitment, specifically, a conventional implicature, for the speaker who utters “Pat, a climber, scaled the Grand Teton”. When this utterance is accepted, the CI, as well as the main assertion, becomes part of the common ground. Similarly, presuppositions such as “Chris has a sister” for an utterance of “Chris’s sister is here”, as well as other preconditions on utterances, such as felicity conditions on speech acts, must be accepted by all interlocutors, entering the CG, in order for the utterance to go through.⁶

Every utterance comes with additional pragmatic presuppositions, such as the presupposition that its felicity conditions are satisfied. We will, in general, not represent such not-at-issue preconditions, assuming they enter the CG as part of general cultural and linguistic knowledge of the interlocutors. In some cases, when especially relevant, we might explicitly represent these presuppositions, as we do novel not-at-issue

⁶ This does not preclude the possibility of certain at-issue and not-at-issue commitments to be tied to a contextually determined judge, such as the speaker. Thus, accepting Alice’s utterances “This is tasty! The chef is damn good!” does not commit the hearer Boris to finding the dish tasty (an at-issue commitment indexed to Alice) or sharing Alice’s attitude to the chef.

commitments of other types, such as conventional implicatures, secondary speech acts (Bach, 1999), etc.⁷

In the F&B model, conversational moves—in F&B’s terminology, assertions, queries, and their modified variants—are distinguished by the way their associated denotations are added to the scoreboard. We will step away from speech act terminology to describe scoreboard updates representing sentential force, and more accurately use terms established for clause types such as declarative, interrogative, or imperative. In our proposal, as outlined above, if A utters a declarative with the content proposition p and not-at-issue contribution q that is not already in the CG, then p and q are added to DC_A , the highlighted $\{\mathbf{p}\}$ (Farkas & Roelofsen, 2015) is added to the top of the Table, and p and q are added to each Projected CG (20.i). If B accepts the utterance (a separate move), this removes $\{\mathbf{p}\}$ from the Table and adds p and q to the CG (20.ii).⁸ The Table in (20) illustrates these changes in the scoreboard in a case where the proffered utterance is a declarative assertion whose content is p = “Pat scaled the Grand Teton.” and which has a not-at-issue commitment not already in the CG, namely, the CI q = “Pat is a climber.” This CI enters the CG when the utterance is accepted.

- (20) A utters: *Pat, a climber, scaled the Grand Teton.*
in an empty context (nothing noted in the commitments, on the Table, or in the CG, though we assume general pragmatic presuppositions to be part of the CG).

	(i) after A’s utterance	(ii) after B accepts A’s utterance
DC_A	{Pat scaled GT, Pat is a climber}	{ }
DC_B	{ }	{ }
Table	<{ Pat scaled GT }>	< >
CG	{ }	{Pat scaled GT, Pat is a climber}
Proj. CGs	{{Pat scaled GT, Pat is a climber}}	{{Pat scaled GT, Pat is a climber}}

In contrast, a polar interrogative with the content $\{\mathbf{p}, \neg p\}$ (with the highlighted proposition corresponding to the pronounced alternative in the question) and a novel not-at-issue contribution q in the same context creates projected CGs containing p and q as well as ones containing $\neg p$ and q . The table in (21.i) illustrates this, again in a case where p = “Pat scaled the Grand Teton.”

⁷ Distinguishing the effects of these different types of not-at-issue commitments in the general case is beyond the scope of this paper.

⁸ We follow the convention from F&B that when p is added to the CG, it is also removed from any individual commitment sets; this just avoids redundancy, since common ground propositions are public commitments of every participant in the conversation.

(21) (Similarly, the previous CG, commitments, and the Table are empty.)

A asks: *Did Pat, a climber, scale the Grand Teton?*

B answers: *Yes.*

	(i) after A utters	(ii) after B answers	(iii) after A accepts B’s answer
DC_A	{Pat is a climber}	{ }	{ }
DC_B	{ }	{Pat scaled GT}	{ }
Table	{ {Pat scaled GT, Pat didn’t scale GT} }	{ {Pat scaled GT} }	{ }
CG	{ }	{Pat is a climber}	{Pat is a climber, Pat scaled GT}
Proj. CGs	{ {Pat scaled GT, Pat is a climber}, {Pat didn’t scale GT, Pat is a climber} }	{ {Pat scaled GT, Pat is a climber} }	{ {Pat scaled GT, Pat is a climber} }

Thus, a declarative that p pushes the singleton $\{p\}$ on top of the Table, while a polar interrogative whether p pushes the issue $\{p, \neg p\}$ on the Table. In both cases p is highlighted (Farkas & Roelofsen, 2015). The content of the Table and highlighting are modeling the availability of propositional discourse referents for subsequent anaphora. Specifically, in F&B’s proposal as recast by Farkas and Roelofsen (2015), the polar particles *yes* and *no* responding to assertions and polar questions refer, anaphorically, to the highlighted propositions. Content that bypasses the Table, like CIs or presuppositions, is not available for such anaphora.

3.2 Relationship between scoreboard updates and speech acts

F&B’s model builds on the common ground / scoreboard proposals in Ginzburg (1996), Roberts (1996), Stalnaker (1978) and others; in particular, it retains Stalnaker’s and Roberts’s use of speech act labels such as “assertion” for the conversational moves reflected in the scoreboard. Unlike Stalnaker and Roberts, F&B and subsequent proposals in Farkas and Roelofsen (2015) tie the nature of the scoreboard update to the linguistic form of the utterance, specifically declarative clause type with falling intonation and (polar) interrogative clause type with rising intonation. However, the clause type (and morphosyntactic shape of an utterance more generally) underdetermines the speech act it is used to express. This means that a scoreboard update is not, in fact, a speech act. Since F&B do not specifically discuss the relationship between scoreboard updates and speech acts, this leads to potential conflation between the two.⁹

⁹ One example of such conflation is Yuan and Hara’s (2019) proposal for Mandarin assertion and question modifiers in the F&B model. Such conflation is not limited to work based on the F&B model, but is a pitfall of any proposal for the semantics-pragmatics interface which does not draw a clear distinction between aspects of the utterance meaning determined by grammar and those determined by pragmatic reasoning, e.g. see our discussion of Krifka (2014) in Sect. 2.3.

We feel that it is important to avoid speech act labels for the meanings which are mostly determined by grammatical convention, and to clarify the relationship between updates (what some scholars have termed “sentential force”, e.g. Chierchia and McConnell-Ginet (2000: 214), Portner (2004), Murray (2010), Starr (2010)) and speech acts. We will thus take as our starting point the F&B model while terming these moves declarative and (polar) interrogative, respectively, and we will proceed to discuss the relationship between the initial scoreboard update and the intended speech act.

For example, a declarative directive (22) will have essentially the same effect on the scoreboard as a declarative assertion, namely, adding the content proposition to the speaker’s commitments, and pushing the singleton set containing this proposition (highlighted) onto the Table, as in (20).

(22) You will take care of her.

Based on this update, the speech act expressed by this utterance is computed via pragmatic reasoning, taking into account the felicity conditions obtaining in the extra-linguistic context (we assume reasoning along the lines of Searle (1965, 1975), Grice (1975)). In the case of (22), the speaker is publicly committing to the proposition that the hearer will do something and proposing to add this proposition to the CG. Assuming that the speaker is sincere (Searle, 1965)/observing the Maxim of Quality (Grice, 1975), and in the absence of a context in which the speaker is prophetic, the reason enabling the speaker’s commitment to the hearer’s future action is the high level of social authority that the speaker has over the addressee. The utterance is therefore inferred to be a directive speech act, and the speaker to be very sure of the hearer’s compliance.

One prediction of this analysis is that unmodified declarative directives with falling intonation, unlike imperatives, are compatible with only a narrow range of directive meanings, specifically, those where compliance is very likely, such as orders. This means that, unlike their imperative counterparts, the utterance of a falling declarative (23) cannot be a wish, the one in (24) cannot be an offer, and (25) cannot be a polite request.

(23) You will get better.

(24) You will have a cookie.

(25) You will open the door.¹⁰

In our interpretation of the F&B model, the scoreboard reflects the sentential force of the utterance, which constrains but does not capture its illocutionary force. This is similar to the proposal in Roberts (1996) in that conversational moves reflect some but not all properties of the speech act the utterance expresses. For example, both the assertion “You will marry your mother, Oedipus” and the directive “You will excuse us” are moves involving a public commitment to and expected acceptance into the CG of the content proposition; while the queries “Where is Jo?” and “I wonder if you know where Jo is” are different moves effecting different scoreboard updates. This is

¹⁰ A reviewer notes that adding “please” may be able to help here, cf. “You will please open the door.”

because, unlike Roberts (1996), we consider the aspects reflected in the scoreboard to be mostly semantic in nature, and thus a query speech act expressed indirectly by a declarative and a pragmatically similar query speech act expressed directly by an interrogative would have different effects on the scoreboard.

These dynamic effects are tied to the form of the utterance (in the sense of syntactic clause type and intonation), as they are in both the F&B and Farkas and Roelofsen (2015) frameworks (and Groenendijk and Stokhof (1984), among others, before that), while potentially also being to some extent sensitive to contextual factors, such as salience and interlocutors’ goals. In addition, we consider these sentential force effects to include one type of pragmatic computation—those that affect contributed commitment. This becomes apparent especially in utterances that Farkas and Roelofsen (2015) term “non-default”, such as tagged declaratives and, as we will see, preposed negation questions.

We will be extending this dynamic framework to include imperative utterances and *won’t you?* tags. We will then outline pragmatic reasoning that uses this scoreboard as well as the context of the utterance as its input to derive the full speech act.

3.3 Preposed negation questions and VERUM/FALSUM operators

Our starting point is the semantics of preposed negation questions, such as *won’t you?* or (26)–(27).

(26) Won’t you open the door?

(27) Didn’t Maribel win?

Repp (2006) hypothesizes that preposing the negation-bearing auxiliary can introduce the epistemic operator FALSUM, expressing something like “don’t add the prejacent to the Common Ground” or “remove the prejacent from the Common Ground”. FALSUM is a direct antonym of the VERUM operator, proposed as the translation of *really* and preposed negation in Romero and Han (2004). These operators have an epistemic component, but are argued to be operating at a pragmatic level, essentially expressing meta-linguistic propositions that the relevant conversational participant is sure that the prejacent proposition should be added to the common ground (in the case of VERUM) or should not be added to the common ground (in the case of FALSUM) (Stalnaker, 1978). Repp (2006, 2009, 2013) relegates these operators to a separate speech-act dimension called “Common Ground (CG) Management”.

Romero (2015) modifies this proposal in two ways. First, she proposes that, in addition to their epistemic contribution in the CG-management dimension, there is also an at-issue contribution of VERUM and FALSUM, which is trivial (an identity function).

(28) $\llbracket \text{FALSUM} \rrbracket =$
 $\lambda p_{\langle s, t \rangle} \lambda t > [p]$ (at-issue)
 $\lambda p_{\langle s, t \rangle} \lambda w. \forall w' \in \text{Epi}_x(w) [\forall w'' \in \text{Conv}_x(w') [p \neg \in \text{CG}_w]]$ (CG-manag.)
 $= \lambda p \lambda w. \text{for-sure-not-CG}_x(p)(w)$
 where $\text{Epi}_x(w)$ is the set of epistemic alternatives of x at w , and $\text{Conv}_x(w')$ is the set of worlds where all the conversational goals of x in w' are fulfilled.

Second, Romero (2015) builds on the standard Hamblin (1973)/Karttunen (1977) (cf. Groenendijk & Stokhof, 1984) denotation for polar (yes/no) questions, in which polar interrogatives contain the question morpheme Q ; she assumes for Q identical denotations at the at-issue level of meaning and the CG-management level of meaning:

$$(29) \llbracket Q \rrbracket = \lambda p_{<s,t>} \lambda w_s \lambda q_{<s,t>}. [q = p \vee q = \neg p]$$

A preposed negation question such as (26) or (27) has an LF as shown in (30).¹¹

- (30) a. Q [FALSUM [You open the door]]
 = Are you sure we don't want to add "You open the door" to the CG?
 b. Q [FALSUM [Maribel won]]
 = Are you sure we don't want to add "Maribel won" to the CG?
 cf. Didn't Maribel win too?

A polar interrogative with FALSUM raises the meta-linguistic issue of whether the interlocutor(s) are sure that the positive prejacent should not be added to the common ground. Posing such a question leads to the positive epistemic implicature that the speaker of sentences like (26) or (27) is biased in favor of the non-negated proposition (that you open the door or that Maribel won) (Romero, 2006a).

This meaning is explicitly spelled out in (32). The at-issue contribution explains the behavior of polar response particles *yes* and *no* (Lance Nathan p.c. to Maribel Romero), which fail to pick up on the contribution of FALSUM and address the prejacent instead (31).

- (31) Didn't Maribel win?
 a. Yes(, she did).
 b. No(, she didn't).

The response pattern is completely in line with the data in Farkas and Bruce (2010)—*yes* picks out the positive answer, while *no* picks out the negative answer, regardless of the polarity of the question itself.

- (32) a. Didn't Maribel win?
 at-issue: { Maribel won, Maribel didn't win }
 CG management: { *for-sure-not-CG* (Maribel won),
 \neg *for-sure-not-CG*(Maribel won) }
 b. Won't you open the door?
 at-issue: { Open(you,door), \neg Open(you,door) }
 CG management: { *for-sure-not-CG* (Open(you,door)),
 \neg *for-sure-not-CG*(Open(you,door)) }

¹¹ Ladd (1981) claims there is another reading for negated polar questions, which Romero (2015) represents with an LF involving VERUM (i). We hold that tags don't have a corresponding reading. In fact, Sailor (2013) provides convincing evidence that Ladd's inner negation reading represented in (i) is not generally available in American English.

(i) Q [VERUM [not [Maribel won/You open the door]]]

The presence or absence of Ladd's ambiguity does not affect our analysis and a complete account of preposed negation questions is outside the scope of this paper.

We adopt this proposal for the meaning of negative reverse polarity tags, including *won’t you?*,¹² and recast it in the pragmatic framework of Farkas and Bruce (2010), as in (33) below. Specifically, the at-issue question is placed on the Table, capturing the intuition that the Table models the behavior of response particles. At the same time, the CG-management content, like all other not-at-issue content, bypasses the Table but affects the Projected Common Ground. Specifically, different projected CGs contain resolutions to both the at-issue and meta-linguistic CG-management questions put forth by the preposed negation question. Combinations of issue resolutions that are contradictory are excluded, since a proposed CG cannot be inconsistent. This means that proposing to put $\text{Open}(\text{B}, \text{door})$ in the common ground is incompatible with being sure it shouldn’t enter the CG, and also that proposing to put $\neg \text{Open}(\text{B}, \text{door})$ in the common ground is incompatible with being unsure that $\text{Open}(\text{B}, \text{door})$ should be kept out of the CG.

- (33) Assuming an empty context: nothing in the commitments, the Table, or the CG¹³

A: Won’t you open the door?

B: Yes/Okay.

	(i) After A asks	(ii) After B answers
DC_A	{ }	{ }
DC_B	{ }	{ }
Table	{ Open(B,door) , $\neg \text{Open}(\text{B}, \text{door})$ }	()
CG	{ }	{Open(B,door)}
Proj. CGs	{ <i>for-sure-not-in-CG</i> Open(B,door), $\neg \text{Open}(\text{B}, \text{door})$ }, { \neg <i>for-sure-not-in-CG</i> Open(B,door), Open(B,door)}	{Open(B,door)}

In the remaining projected CGs, we can omit the weaker metalinguistic propositions when they are superseded by stronger at-issue propositions in the same projected

¹² We’re not adopting any of several alternative analyses proposed for PrepNegQs since Romero (2015), such as AnderBois (2019) or Frana and Rawlins (2019) since we’re not fully convinced by their arguments. Specifically, AnderBois’s pragmatic derivation of positive bias based on competition with positive questions has a weak link in that by failing to assign more importance to the positive answer, the speaker doesn’t necessarily thereby assign high importance to the negative answer. In fact, AnderBois’s analysis goes against the arguments in Sailor (2013) that the negation in PrepNegQs doesn’t behave quite like normal sentential negation. We are taking Sailor’s evidence (and others) to mean that PrepNegQs contain *FALSUM*, rather than regular negation. In addition, regardless of whether Ladd’s ambiguity exists in general, AnderBois’s account has no way to derive the readings with sentences that contain NPIs (like *either*), since positive bias and double-checking the positive proposition are tied together in the pragmatic derivation.

We also don’t wish to adopt Rawlins’s (2019) approach and declare *FALSUM* to introduce a presupposition. This is due, in addition to data involving tags that we discuss below, to variations of their example (75) in which this presupposition is satisfied, but the PrepNegQ is infelicitous:

(i) H: I’m not going out today. S: #Aren’t you going out?

¹³ We are presenting this in an empty context for the sake of illustrating the effects of the preposed-negation question, and not as a claim about the felicity conditions of this type of questions.

CG. We therefore propose that the scoreboard resulting from the preposed negation question in (33) is functionally equivalent to the simplified one in which the Projected Common Grounds are just $\{\{\neg\text{Open}(\text{B}, \text{door})\}, \{\text{Open}(\text{B}, \text{door})\}\}$. The positive answer such as *Yes* then narrows it down and puts $\text{Open}(\text{B}, \text{door})$ into the CG itself, since both interlocutors are now committed to it.

With this rendering of the preposed negation questions' contribution to the conversational scoreboard in place, we turn to the remaining ingredient needed for an account of reverse polarity tags such as *won't you?* that cut across declarative and imperative anchors.

3.4 Imperatives

There have been several proposals for the interpretation of imperative clauses couched in frameworks similar to F&B's conversational scoreboard (Cormany, 2013; Rudin, 2018b; Starr, 2010). We choose instead to adopt the semantics of imperatives proposed by Schwager (2006b), Kaufmann (2012, 2016), which allows us to easily separate the semantic content of an imperative utterance from its pragmatic effect, which we can then integrate into the conversational scoreboard. In Sect. 5, we discuss the compatibility of our analysis with other models of imperatives, including the proposal in Condoravdi and Lauer (2012).

For Kaufmann, committing to a proposition p means adding to the common ground the proposition that necessarily, according to the speaker's epistemic alternatives, p is true. Imperatives, like declaratives, express propositions, though these propositions come with presuppositions that ensure their differences from declarative assertions. Specifically, an imperative is self-verifying and non-descriptive.

By uttering an imperative like "Help her", a speaker S commits to the proposition that the hearer should¹⁴ help her, and in addition requires, via presuppositions, that the utterance is performative and the right kind of modal base and ordering source are used. More formally:

- (34) In a context c containing a salient Question Under Discussion Π_c , salient modal base f_c and ordering source g_c , an imperative expresses the speaker's commitment to the proposition $\Box^{f_c, g_c} p$, and carries two presuppositions regarding the context of the utterance:

Epistemic authority:¹⁵ The speaker S is considered an epistemic authority in c . This means that at all $\langle w, t' \rangle$ such that $\langle w, t' \rangle \in CS$ and $t' \in [t, t+]$, for all p ,

$$\Box^{f, g} p \text{ at } \langle w, t' \rangle \leftrightarrow \Box^{R_S} \Box^{f, g} p \text{ at } \langle w, t' \rangle.$$

¹⁴ We use "should" in the paraphrases sometimes, but note that the actual content of the imperative is not equivalent to "should" in all contexts. Where the ordering source creates obligations, then the "should" paraphrase is appropriate. However, imperatives are compatible with a wider range of ordering sources than the modal "should", e.g. (i) does not create obligations. We briefly discuss this further in Sect. 3.4.1. For more discussion of ordering sources and modal flavors of imperatives, see Kaufmann (2012), Condoravdi and Lauer (2012), among others.

(i) Get well!

Paraphrase: At every point of evaluation in the Stalnakerian Context Set CS , propositions are necessary with respect to the modal base f and ordering source g , if they are necessary wrt. f and g in the epistemic alternatives of the speaker S .

Non-descriptivity: The context c is practical for the addressee A or else expressive. This means that either

The context is practical for A : The QUD Π_c is a set of non-overlapping propositions where each cell represents a future course of events that can be chosen by A , g_c represents a set of rules, preferences, or goals, and CS entails that the f_c, g_c characterize the modality relevant to resolving Π_c .

or

The context c is expressive, which means there is no agent α such that c is a practical context for α (e.g., in wishes).

Kaufmann embeds this proposal in a pragmatic framework, in which committing to a proposition has an effect on the Stalnakerian Context Set CS , as well as a Robertsian QUD Π_C . We will move away from this framework, and instead express the sentential force of an imperative utterance in the F&B-style scoreboard.

3.4.1 Proposal: imperatives in the scoreboard

We adopt Kaufmann’s proposal that the utterance of an imperative denotes the proposition $\Box^{f_c, g_c} p$. If imperatives were treated exactly as assertions in the F&B style scoreboard, uttering an imperative would update the scoreboard as follows:

- (35) (Take 1 – to be revised) $\Box^{f_c, g_c} p$ is added to DC_A , to the Table, and to the projected CG .

With respect to the imperatives’ effect on the QUD, which might be thought equivalent to F&B’s Table, Kaufmann (2012) states that imperatives and performative modal declaratives are identical in their at-issue content, while Kaufmann (2016) observes that either the whole modal proposition or just the prejacent can be at-issue,¹⁶ in the sense of providing a (partial) answer to the QUD.¹⁷ Her example (36) illustrates the case when the whole modalised proposition is at-issue (also illustrated in (37)).

- (36) Bella: Which of these two films should I show?
Alice: Show this one. (based on Kaufmann, 2016: ex. 25)

¹⁵ Epistemic authority is different from social authority. The former is a presupposition causing the imperative to be self-verifying, as paraphrased here. The latter is a felicity condition for directive speech acts—that the speaker has the authority to ask the hearer to perform some action. For example, imperative wishes like *Get well soon!* involve epistemic but not social authority, while declarative directives like *You will help me* involve social but not epistemic authority, illustrating the difference.

¹⁶ Kaufmann (2012) proposes that the future orientation of imperatives is due to the imperative operator itself (p. 96). The object that goes on the Table, is, thus, not just the timeless prejacent, but rather the prejacent forward-expanded in time by the imperative operator (cf. Condoravdi, 2002). For perspicuity, we will spell out this future-expanded prejacent in imperatives as “You will ...” or “will- p ”, but nothing in our analysis depends on this one way or another.

¹⁷ We note that both of those options are fully compositional, because the imperative operator combines with the prejacent as its argument to form the modal proposition.

(37) Bella: Which of these two films should I show?

Alice: You should show this one.

However, we argue that the proposition most relevant to the QUD and the at-issue proposition can be different for imperatives. In most cases, the issue that the speaker of an imperative “Do the action” puts on the Table is whether you will do the action, even if the context suggests that the QUD is whether you should do the action.

The Table in the F&B model was designed to model those propositions and issues that are up for discussion and are picked up by response particles **after** an utterance. The issues on the Table are, in a sense, anaphoric antecedents for expressions like response particles, and we can think of them as issue-sized discourse referents (cf. Murray, 2010). Such referents are assumed to become available through a grammar-driven semantic interpretation process (Heim, 1982; Kamp, 1981); their salience and availability for pragmatic computation are often influenced by both grammatical and contextual factors (Malamud, 2006; Walker et al., 1998).

In this sense of at-issueness, diagnostics for the most part point to the proposition that the imperative puts on the Table being along the lines of *you will help her*; *you will show this one*, that is, just the prejacent proposition.

This anaphoric uptake by response particles is illustrated in (38)–(41) below.¹⁸

(38) Bella: Which of these two films should I show?

Alice: Show this one.

Bella: **Okay** (= “I will show this one”, not “I should show this one”)

(39) Ann, wish him a happy Father’s Day for all of us.

ANN: **Yes**, I will. NPR (COCA)

(40) MITCHELL: Well, tell us what it is, Mika.

BRZEZINSKI: **No**, I won’t. I won’t do it. CBS (COCA)

(41) Mom: Have a nice day at school!

Son: **No**, I won’t! (attested)

Conversely, attempts to use response particles to address the modal proposition, such as those in (42)–(44), are infelicitous on directive uses, as has been noted by Kaufmann (2012), Condoravdi and Lauer (2012), among others, as well as on wish uses.

(42) Alice (suggestion to a colleague): Show this film.

Bella: # Yes, though I won’t do it.

(Intended: “I should show this film, though I won’t do it.”)

(43) Alice (addressing a sullen teen): Have a nice day in school.

Bella: # No, you don’t really wish that./# No, I shouldn’t have a nice day in school.

(44) Ann, wish him a happy Father’s Day for all of us.

ANN: # **No**, I shouldn’t

(Intended: “I shouldn’t wish him a happy Father’s Day for all of you/us.”)

¹⁸ “Okay” is however not a strong marker of issues on the Table, unlike “yes” and “no”.

However, this preference for the prejacent being on the Table is not categorical. For instance, the modal proposition seems to be at-issue in this anaphoric sense in disinterested advice uses of imperatives. A “yes” response to the advice in (45) is infelicitous, because it conveys that Bella, the hearer, can independently commit to the proposition “Bella should take the ‘A’ train to get to Harlem”, which is in contrast with Bella asking for advice in the first place. So, on the advice uses, it appears that the modal proposition is on the Table, since “yes” picks up on it. We can conclude that availability of the modal proposition for response particles is affected by the speech act expressed by the imperative, since it seems to become at-issue when the hearer’s preferences and goals drive the ordering source, as in these disinterested advice uses.

- (45) Bella: How do I get to Harlem?
Alice: Take the ‘A’ train.

We therefore suggest that imperatives don’t place any issue on the Table automatically, but that either the modal proposition or the prejacent proposition might be pushed to the fore by contextual factors, specifically, by interlocutors’ goals. This means that the scoreboard (and the notion of sentential force it represents) is not a purely semantic object, since the Table updates are affected by such clearly pragmatic considerations. The prejacent proposition can become salient more easily, since the modal proposition comes with the presupposition of the speaker’s epistemic authority and thus is unlikely to be up for debate. However, contextual factors can override this preference, such as, for the disinterested advice uses, mutual public knowledge that the speaker doesn’t care if the hearer follows the advice. Note that this is another difference between imperatives and “should” declaratives, in that the latter always put the modal proposition on the Table.

We thus propose the following minimal change to (35):

- (46) (Take 2 – to be amended) Imperatives put $\Box^{f,c,gc} p$ on DC_A , but unless contextual factors override this default, the issue on the Table (and therefore in the projected CG) is {will- p }.

We note that this change is not crucial to our proposal for independent “Won’t you?” utterances following an imperative, or for *won’t you?* tags. In the case of the former, the imperative issue, whether $\Box p$ or will- p , is superseded by the issue introduced by the question. In the case of the tag, the issue that the imperative puts on the Table is disambiguated in favor of the one introduced by the tag question. This means that B’s response in (47) cannot be interpreted as a disinterested friendly advice responding to the question directly, but only as a request to play the movie.

- (47) Bella: Which of these two films should I show?
Alice: Show this one, won’t you?

In addition, the imperatives impose preconditions on their input context corresponding to the two presuppositions proposed in Kaufmann (2016) and explained in (34). If the context doesn’t already meet these preconditions, they are accommodated in the DC_A and projected CG, but not added to the Table (see our discussion of not-at-issue commitments above, cf. (20)).

The two presuppositions contributed by the imperative make the imperative itself self-verifying. As a result, the full modalized proposition $\Box^{f_c, g_c} p$ is presented as a public commitment of the speaker destined for the CG. Recall that based on the evidence in this section, we conclude that the modalized proposition bypasses the Table in most cases, and is added directly to the projected CG. Determining the exact status of this modalized not-at-issue proposition within the typology of not-at-issue commitments lies beyond the scope of this paper.

Given our adaptation of Kaufmann's analysis, a typical imperative directive or wish has the following effect on the scoreboard:

- (48) Assuming an empty context: nothing noted in the commitments, the Table, or the CG, though we assume general pragmatic presuppositions to be part of the CG.

A: Open the door!

B: Okay.

	(i) after A's utterance	(ii) after B accepts A's utterance
DC_A	$\Box^{f_c, g_c} \text{B open the door}$	{ }
DC_B	{ }	{ }
Table	$\langle \{ \text{B will open the door} \} \rangle$	$\langle \rangle$
CG	{ }	$\{ \{ \Box^{f_c, g_c} \text{B open the door, B will open the door} \} \}$
Proj. CGs	$\{ \{ \Box^{f_c, g_c} \text{B open the door, B will open the door} \} \}$	$\{ \{ \Box^{f_c, g_c} \text{B open the door, B will open the door} \} \}$

Note that after the hearer commits to "B will open the door", this proposition becomes a joint commitment of the speaker and hearer—a part of the CG. The speaker's side of this commitment comes about in the same way that all dependent commitments do (Gunlogson, 2008), by taking the hearer's word for it, since putting a proposition on the Table does not constitute any kind of commitment to it.

Such a proposal for future joint commitment without simultaneous speaker commitment is a normal feature of questions, which propose future joint commitments to an answer, as well as other constructions. In the case of imperatives, the speaker endorsement that is part of the modal proposition prevents the speaker from continuing an imperative with "but I don't want you to". Continuations such as "though I doubt you will" are perhaps not semantically precluded, but they are in conflict with the felicity conditions for directive uses of imperatives, and possibly with felicity conditions for the wish uses. However, examples like (49) are possible, demonstrating lack of speaker commitment to the prejacent proposition of the imperative.

- (49) A: What do I do to win the race? - B: Practice every day, though I doubt you will.

In the absence of independent commitment of the hearer to the prejacent proposition "B will open the door", such as when the hearer only signals uptake and not agreement, only the modal proposition $\Box p$ makes it to the CG, and so neither interlocutor becomes committed to "B will open the door".

In this analysis, all imperatives have the same effect on the scoreboard modulo the Table, as described above. As with previous proposals, the different speech acts, such as (50), are derived via pragmatic reasoning from the scoreboard and felicity conditions reflected in the context. Such contextual factors may include, e.g., the presence in the scoreboard of a previous question about the speaker’s future choice of action, deriving the disinterested advice interpretation.

- (50) a. Get well! (wish)
 b. Have a cookie! (invitation/offer)
 c. How do I get to Harlem? – Take the A train! (disinterested advice)

4 Our proposal

The semantic content of declarative or imperative anchors and of *won’t you?* tags, together with some contextual considerations, is used to dynamically update the conversational scoreboard, which reflects the sentential force of the utterance. The scoreboard, in turn, serves as the input to further pragmatic reasoning whereby the speech act expressed by the utterance is determined. We will now propose a model of various utterances involving declaratives, imperatives, and *Won’t you?* as a separate utterance and as a tag, based on the F&B style scoreboard interpreted as tracking the dynamic semantics of utterances.

4.1 Negative RP tags and levels of commitment

We noted already that elliptical PrepNegQs (whether they are used as tags or as independent utterances such as *Won’t you?*) have the same exact semantics and effect on the scoreboard as regular PrepNegQs. In light of this, the complementary distribution of PrepNegQs on the one hand, and tagged declaratives or independent declaratives followed by an elliptical PrepNegQ on the other hand in (17) and (18), repeated below, is surprising. We take this distribution to be evidence against the meaning that Frana and Rawlins (2019) propose for FALSUM. According to their analysis, FALSUM is part of the structure of PrepNegQs, and its meaning introduces a presupposition that the context is at least neutral between p and $\neg p$, and possibly supports $\neg p$. Yet, the tags and independent elliptical PrepNegQs have the same structure as plain PrepNegQs, but different felicity conditions.

(17) A says “I’m staying home.”

- B: ✓ Aren’t you going out? (Frana & Rawlins, 2019: 75)
 # You’re going out, aren’t you?
 # You’re going out. (Aren’t you?)

(18) B sees A wearing make-up and a nice outfit.

- B: # Aren’t you going out?
 ✓ You’re going out, aren’t you?
 ✓ You’re going out. (Aren’t you?)

The infelicity of the tagged and independent declaratives in (17) is evidence that these utterances express some level of speaker commitment to the prejacent p that is absent from plain PrepNegQs. This commitment provides a direct contradiction to A's utterance, and yet B's (tag or independent) question makes it seem that B is still attempting to defer to A. The flipped pattern in (18) shows that the requirement that the context does not favor p is not in force for the tag and independent elliptical PrepNegQs that follow a declarative.

Together, these examples mean that both the bias/commitment and the requirement of neutrality between p and $\neg p$ or evidence for $\neg p$ emerge as a result of pragmatic calculations based on the meaning of *FALSUM* in the PrepNegQ, and are not hardwired into it. This flexibility allows the presence of the declarative (whether as an independent utterance or as an anchor for the tag) to intervene in the pragmatic calculations, resulting in the different felicity conditions for PrepNegQs by themselves vs. preceded by a declarative clause with the propositional content of the prejacent p .

What is the precise nature of the calculation that means the tag and the elliptical PrepNegQ following a declarative are felicitous in (18) while PrepNegQ off the bat is infelicitous?

A PrepNegQ introduces *FALSUM* focus, raising the issue of whether the hearer wants to keep the proposition p out of the CG. This focus needs to be licensed—there should be a reason why B is making it easy for A to say “no”, why the question of keeping p out even arises.¹⁹ In the presence of evidence towards p (nice outfit and make up) and absence of concurrent conflicting evidence or other discourse, there is no such reason, so PrepNegQ is infelicitous. But B uttering a declarative, whether as the anchor for the tag or an independent utterance, provides such a reason, since at the very least it puts a singleton issue $\{p\}$ on the Table, and thus raises the expectation that p will eventually become a shared commitment, that is, that it will be added into the CG. This expectation licenses the focus on the truth or falsity of p , raising the stakes enough to justify the request, expressed by the elliptical PrepNegQ (tag or independent), for A to speak up against putting p in the CG or forever hold their peace.

While PrepNegQs express a lower level of speaker commitment to the prejacent proposition than tagged declaratives, there is evidence that they nevertheless express a significant level of speaker commitment, as noted by all prior analyses. This becomes especially clear when we compare this construction with rising declaratives.

Jeong (2018), Rudin (2018a, b) treat the overall effect of an independent utterance as arising from two sources: clause type of the declarative or imperative, and the falling or rising final tune with which it is uttered. Specifically, Rudin (2018a) attributes the raising of the singleton issue in both declaratives and imperatives to the clause

¹⁹ We don't want to say that *FALSUM*/raising the issue of keeping p out of the CG is only licensed in the presence of evidence against p , since PrepNegQs are felicitous in scenarios that are completely neutral between p and $\neg p$ in Ladd's (1981) suggestion scenarios, like the one below, where PrepNegQs are felicitous with or without a preceding declarative:

A: Do you want to grab some food?

(Frana & Rawlins, 2019: (27))

B: ✓ Isn't there a vegetarian restaurant around here?

✓ There's a vegetarian restaurant around here, isn't there?

✓ There's a vegetarian restaurant around here. (Isn't there?)

type of the utterances, whereas the speaker commitment to a particular proposition is attributed to the falling intonation assigned to the utterance. To show this separation of commitment from the clause type, Rudin uses sequences of incompatible rising utterances, such as (51) which are nevertheless felicitous.

- (51) Context (adapted from Rudin (2018a, b)). Bella: I misplaced my planner, so I have no idea what I will be doing this evening, do you remember?
 a. Alice: You will work on your paper \uparrow ? You will go to the beach \uparrow ?
 b. Alice: You will work on your paper \downarrow . # You will go to the beach \downarrow .

We observe that, in contrast, incompatible sequences of PrepNegQs (52) are infelicitous, which suggests that the positive epistemic implicatures arising from the PrepNegQs commit the speaker to the prejacent proposition enough to create the infelicity.

- (52) Won’t you open the door \uparrow ? # Won’t you leave the door closed \uparrow ?
 (53) You will work on your paper, won’t you \uparrow ? # You will blow it off and go to the beach, won’t you \uparrow ?

As expected, sequences of incompatible tagged declaratives are also infelicitous (53).

Together with the evidence from (17) that the level of commitment expressed by tagged declaratives is higher than that expressed by PrepNegQs alone, this indicates that our model needs to include a scale of commitment. Plain declaratives which express full commitment, and neutral polar questions which express no commitment provide endpoints for this scale. A single intermediate level of commitment between these endpoints could be modeled by using the notion of projected speaker commitments (Malamud & Stephenson, 2014). However, this notion does not provide a means to formally model a distinction in commitment between plain PrepNegQs and the higher (but still not full) level of commitment in tagged declaratives.

The existence of at least two distinct commitment levels between no commitment and full commitment means that instead of or in addition to projected commitments, we need a commitment scale providing a graded notion. We start with the idea that various levels of private belief make an utterance assertable, based on the quality threshold in a given context (Potts, 2006; Scheffler, 2013). Translating this into the realm of public commitments, we propose that an utterance may contain a signal that its speaker’s commitment to its content is in a range that falls short of the contextual threshold for assertions. Specifically, we propose that both regular PrepNegQs and PrepNegQs following a declarative do this: in effect, both PrepNegQs and tags locally lower the level of commitment to the prejacent proposition. Both constructions are compatible with a range of commitment levels, but the lower bound of the range signaled by plain PrepNegQs is below the lower bound of the commitment range signaled by a tagged declarative or a PrepNegQ following an independent falling declarative utterance.

This difference in expressed public commitment results from the presence of the declarative raising the bar.

Turning to imperative utterances, we note that tagged imperatives (55) pattern with PrepNegQs (52) and tagged declaratives (53), and differently from rising imperative

utterances, which can form felicitous incompatible sequences (54), (Rudin, 2018b, from ex. 9).²⁰

- (54) Bella: I'm having trouble managing my time lately. I don't know what my plans should be for this evening, do you have any advice?
 a. Alice: Work on your paper \uparrow ? Blow it off and go to the beach \uparrow ?
 b. Alice: Work on your paper \downarrow . # Blow it off and go to the beach \downarrow .
 (55) Work on your paper, won't you \uparrow ? # Blow it off and go to the beach, won't you \uparrow ?

This indicates that tagged imperatives also contribute an (intermediate) level of commitment to the modal proposition, unlike rising imperatives. Whether this commitment is contributed only by the preposed negation tag, or if, like tagged declaratives, tagged imperatives express a higher level of commitment, we leave as an open question for future research.

4.2 Modeling intermediate levels of commitment on the scoreboard

We next turn to the modeling of utterances expressing an intermediate level of commitment in the conversational scoreboard.

First, let us consider the effect of a PrepNegQ such as *Won't you?* itself in (58)–(60) or *Won't you open the door?*, expressing the lower of the two intermediate levels of speaker commitment to the prejacent proposition. When ellipsis is present, it is resolved by mechanisms which are beyond the scope of this paper, so that the elliptical questions above are interpreted as *Won't you open the door?* in (58)–(59) and as *Won't you sulk (now)?* in (60). The meaning of the PrepNegQ is spelled out in (56).

- (56) a. Won't you (open the door)?
 b. LF: [Q [FALSUM [you will open the door]]]
 c. at-issue content: {you will not open the door, you will open the door}
 d. CG-management: {*for-sure-not*-CG_x(you will open the door), \neg *for-sure-not*-CG_x(you will open the door)}

Dynamically and pragmatically, this move contributes several effects, though perhaps not all at the same time:

- (i) The at-issue dynamic semantic effect is to place the issue of whether you will open the door on the Table.

²⁰ Rudin (2018a, b) argues that sequences of contradictory rising imperatives present a problem for both Kaufmann's proposals and Condoravdi and Lauer's (2012), because these are different from sequences of rising modal declaratives that paraphrase Kaufmann's semantics for imperatives and of rising *want* statements that paraphrase Condoravdi and Lauer's (2012) proposal. We feel that these objections might not be fully fair, in that the behavior of the declarative paraphrase under changing intonation might well differ from that of the imperative original, including that, as we point out in our discussion of Kaufmann's proposal, *should*-declaratives are not equivalent to imperatives to begin with. In addition, Condoravdi and Lauer (2012) never propose that imperatives are equivalent to a *want*-statement. Moreover, in recent work, Condoravdi and Lauer argue that rising imperatives (like declaratives) yield list readings which are fully compatible with their analysis (Condoravdi, 2019).

- (ii) The CG-management content gives rise to the positive epistemic implicature p that the speaker thinks it likely that the hearer will open the door, indicating an intermediate level of speaker commitment, while making it easy for the hearer to overrule this bias.
- (iii) As discussed in the previous section, the presence of the CG-management content with the focus on the truth or falsity of p requires licensing. This licensing can come about if the speaker is not sure whether the prejacent should be kept out of the CG, whether because of the presence of conflicting evidence, in the absence of evidence one way or another, or if a speaker is checking if a proposition they’re publicly committing to should be kept out of the CG.

We record these effects resulting from a mix of grammatical contributions and pragmatic computations in the scoreboard. We model intermediate levels of commitment, such as described in (ii) above, by making DC_X be a set of pairs, rather than a set of propositions, where each pair consists of a proposition and a level of commitment associated with this proposition, which can be thought of as a subjective probability the speaker assigns to the sentence (Davis et al., 2007; Potts, 2006). This level indicator could be a real number, an interval, or a categorical marker. For simplicity we will use intervals representing a minimum and maximum level of commitment conveyed by the speaker.

The dynamics of the common ground, therefore, depends on the contextual threshold determining the level of commitment that allows an utterance to become accepted by other participants. Only propositions associated with commitment levels higher than the threshold will be accepted and thereby added to the CG (Davis et al., 2007; Potts, 2006). In contrast, propositions associated with only tentative commitments will remain unshared by other interlocutors, unless confirmed. A confirmation will not only commit other players at a high level, but also can serve to raise the original speaker’s level of commitment to the proposition (cf. Gunlogson’s (2008) notion of dependent commitment).

The state of the scoreboard after an utterance such as (56) is as follows (as we explain in footnote 16, we spell out the prejacent proposition in imperatives as will- p , rather than just p).

(57) Won’t you (open the door)?

DC_A	$\{\langle \text{will-Open}(\text{B,door}), [0.5,0.8] \rangle\}$
DC_B	$\{\}$
Table	$\{\langle \text{will-Open}(\text{B,door}), \neg \text{will-Open}(\text{B,door}) \rangle\}$
CG	$\{\}$
Proj. CGs	$\{\langle \text{for-sure-not-in-CG will-Open}(\text{B,door}), \neg \text{will-Open}(\text{B,door}) \rangle, \langle \neg \text{for-sure-not-in-CG will-Open}(\text{B,door}), \text{will-Open}(\text{B,door}) \rangle\}$

These effects interact with the effects of the declarative anchor in the case of a tagged declarative to achieve the higher intermediate level of speaker commitment, as we

discuss in Sect. 4.4.2 below. But first, let us consider the dynamics and the cumulative effect of an independent *Won't you?* question following a declarative or imperative utterance.

4.3 Separate *Won't you?* utterances in the scoreboard

We will discuss the full paradigm of separate *Won't you?* utterances in turn: imperatives (58), declarative directives (59), and declarative assertions (60).

- (58) Open the door! Won't you?
- (59) You will open the door. Won't you?
- (60) Now you'll sulk. Won't you?

To start, let us consider how the effect of *Won't you?* interacts with the contribution of the imperative in (58). As we described above, the plain imperative, as in (48), puts only the singleton issue {will- p } on the Table, while committing the speaker to the modal proposition $\Box^{f(c),g(c)}p$ at the default full level of commitment (cf. Davis et al., 2007), as well as contributing presuppositions ensuring that the modal proposition is interpreted performatively. The projected CG reflects the state of the Table in that it contains will- p as part of the single path forward envisioned for the conversation in the normal course of events. In the absence of further remarks by the speaker, the hearer can resolve the issue on the Table by accepting the proposition {will- p } into the CG. Since this is a singleton issue, not much of a contribution is required for the acceptance to go through, i.e. it can be tacit.

The example (58) is modeled as updating this post-“Open the door” context with interrogative “Won't you?”, which adds the issue of {will-Open(B,door), \neg will-Open(B,door)} to the Table. Coming right after a move that already put the singleton {will-Open(B,door)} on the Table, this move expands the projected CG to include the negative possibility. The interrogative serves to request a verbal response from the addressee, since implicit agreement is not sufficient to resolve this issue consisting of two incompatible propositions. The choice of the proposition to move the conversation forward is up to the hearer.

In addition, when the speaker of the imperative continues to the interrogative utterance, there is a presumption of tacit acceptance of the not-at-issue high-level commitments of the imperative by the hearer, putting the modal proposition $\Box^{f(c),g(c)}\text{Open(B,door)}$, in the CG. At the same time, the preposed-negation interrogative adds a tentative commitment (will-Open(B,door), [0.5, 0.8]) to DC_A , as we propose in the previous section.

- (61) Assuming an empty context: nothing noted in the commitments, the Table, or the CG
A: Open the door! Won't you?

	(i) after imperative	(ii) after <i>Won’t you?</i>
DC_A	$\{\langle \Box^{fc,gc} \text{Open}(B, \text{door}), [0.98, 1] \rangle\}$	$\{\langle \text{will-Open}(B, \text{door}), [0.5, 0.8] \rangle\}$
DC_B	$\{\}$	$\{\}$
Table	$\{\langle \text{will-Open}(B, \text{door}) \rangle\}$	$\{\langle \text{will-Open}(B, \text{door}), \neg \text{will-Open}(B, \text{door}), \text{will-Open}(B, \text{door}) \rangle\}$
CG	$\{\}$	$\{\langle \Box^{fc,gc} \text{Open}(B, \text{door}) \rangle\}$
Proj. CGs	$\{\langle \Box^{fc,gc} \text{Open}(B, \text{door}), \text{will-Open}(B, \text{door}) \rangle\}$	$\{\langle \Box^{fc,gc} \text{Open}(B, \text{door}), \text{for-sure-not-in-CG will-Open}(B, \text{door}), \neg \text{will-Open}(B, \text{door}), \Box^{fc,gc} \text{Open}(B, \text{door}), \neg \text{for-sure-not-in-CG will-Open}(B, \text{door}), \text{will-Open}(B, \text{door}) \rangle\}$

The scoreboard update serves as an input to pragmatic reasoning leading to the interpretation of the imperative as a directive, wish, or disinterested advice, depending on the context and whether the imperative includes an action under the hearer’s control. We have no new proposal regarding this step (Grice, 1975; Searle, 1965, 1975). The interpretation of the independent *Won’t you?* utterance following an imperative depends on the speech act the imperative expresses.

We can see two alternative inferences that may arise from adding the interrogative following an imperative directive. If this solicitation of the hearer’s input is a sign that the speaker does not have full social authority for a directive speech act, this could be a partial walking back of the directive. If the raising of the issue and requesting hearer’s answer is interpreted as an insistence that the hearer address the issue, then there is no “walking back” feeling, but more of a “nagging” feeling expressed, where the speaker is doubling down and asking the hearer to concede and promise compliance with the imperative directive.

Disinterested advice uses of imperatives are not felicitously followed up by querying whether the hearer will follow the advice, since the query contradicts the speaker’s lack of personal interest, with the result that the preceding imperative becomes reinterpreted as a directive.

(62) How do I get to Harlem? – Take the A train! # Won’t you?

Finally, it seems that wish uses of imperatives, such as “Get well”, cannot be felicitously followed up by querying whether the hearer will or won’t get well, since it is common knowledge that the hearer is not in a position to resolve this issue.

(63) Get well! # Won’t you?

Turning to the interaction of a **declarative** utterance and a *Won’t you?* question in the following utterance, let us first consider the directive declarative from (59).

(59) You will open the door. Won't you?

Recall that the declarative adds the content proposition that the hearer will open the door to the speaker's commitment set (at a high level of commitment), while also pushing the singleton set containing this proposition onto the Table. Pragmatic reasoning based on this update and contextual factors results in a directive interpretation for this utterance (likely an order, or other types of directives resulting when the speaker has a high level of social authority). Following this speech act with the *Won't you?* question introduces speaker commitment to the same proposition at a much lower level, which, together with the introduction of the negative possibility to the Table, introduces pragmatic tension with the previous utterance. This tension can be interpreted in several different ways:

The PrepNegQ can be a signal that the speaker does not have full social authority after all, which is a break with the previous high-authority context and thus a partial walking back of the directive.

Another possibility stems from the fact that the CG-management content of the interrogative makes it easy for the hearer to say "No". This means that the follow-up could also be interpreted as introducing a higher level of politeness than a very authoritative (perhaps even rude) declarative directive expressed—a mitigation.

Yet another alternative, as with the imperative followed by *Won't you?*, is that this sequence could be interpreted as nagging the hearer to concede and promise compliance.

In all of these paths the pragmatic computation can take, the declarative expressing commitment to p licenses the FALSUM focus on the truth or falsity of p contributed by the elliptical PrepNegQ.

Similarly to the directive declarative, when the independent utterance of *Won't you?* follows a declarative interpreted as an assertion, as in (60), a pragmatic tension arises between the speaker's high-level commitment to the prejacent proposition p conveyed by the declarative, and the PrepNegQ expressing a lower level of commitment to p while also raising the issue of whether that same proposition holds or not.

(60) Now you'll sulk. Won't you?

The result is a feeling that the speaker is partially taking back the commitment expressed by the assertion. Formally, this "taking back" move is reflected in both the reduced level of speaker commitment, as well as in the projected CG, which first contains only possible common grounds with p , but after addition of *Won't you?* must be extended to include both compliant and noncompliant worlds. Willingness to entertain noncompliant worlds signals a willingness to take back the original commitment expressed by the declarative.

Finally, note that while a declarative conveying p followed by a PrepNegQ in both the directive and assertive versions results in a lowered level of commitment to the proposition p , this level is nevertheless higher than what would result from a plain PrepNegQ without the preceding declarative.

We propose that the pragmatic process of inferring a new level of speaker commitment based on the PrepNegQ and the preceding declarative can be modeled as

taking an average of the minimum and maximum levels of the two utterances. For instance, if a default full level of commitment to a declarative is $[0.98, 1]$, then following this with a tentative commitment $[0.5, 0.7]$ based on the PrepNegQ will result in $\langle p, [0.74, 0.9] \rangle$ being added to DC_A . While below the full level of commitment that serves as a threshold for propositions to be added to the CG in most contexts, this is still sufficiently high that the infelicity caused by the declarative following the other interlocutor’s utterance to the contrary is not repaired by the addition of the PrepNegQ, as we could see from the contrast in (17) (see Sects. 2.5 and 4.1).

4.4 Won’t you? tags in the scoreboard

Tags differ from independent *Won’t you?* utterances in that the anchor and the tag effect a single scoreboard update. The overall update consists of the effect of the utterance on the speaker’s commitments and its effect on the Table.

In considering commitments of imperative and declarative anchors in *won’t you?* tagged sentences, we follow the evidence discussed in Sect. 4.1, which demonstrates that the tagged declarative expresses a higher level of commitment to the prejacent proposition than a plain PrepNegQ.

4.4.1 The overall effect of tagged imperatives

As we pointed out before, the tagged imperative in (64) feels quite different from the independent utterance in (58), in that in out-of-the-blue contexts, the felicity condition of the speaker’s social authority is not fully applied in the first place: the tag seems to serve to lower the social authority threshold for directives, leading to an interpretation as a polite request. In a more specific context, this tagged imperative may convey a different speech act than the polite request.

(64) Open the door, won’t you?

The ultimate context-dependent effect is achieved in two steps. First, the scoreboard update is compositionally derived from the effects of the anchor and the tag. Second, pragmatic reasoning computes the ultimate interpretation based on this scoreboard update and the context. In the following we go over the steps in detail.

We propose that, while the imperative by itself puts only $\{you\ will\ open\ the\ door\}$ (abbreviated as $will\text{-}Open(B,door)$) on the Table on most uses, in contrast, the tagged imperative includes the possibility where the hearer won’t do it as well. This effect is conveyed both via the non-singleton issue $\{will\text{-}Open(B,door), \neg will\text{-}Open(B,door)\}$ on the Table, and in the form of the proposition that $Open(B,door)$ should not be added to the CG. This is just the expected effect of an interrogative clause containing $FALSUM$ on the scoreboard. As a result, the projected CGs following a tagged imperative contain several incompatible options for the expected direction of the following conversation, including the possibility where B will not open the door.

The projected CGs also contain the modalized proposition $\Box^{fc,gc} p$ expressed by the imperative anchor, which in most cases is a not-at-issue contribution by the speaker (cf. discussion in Sect. 3.4.1). Recall that all not-at-issue contributions are added to

the corresponding speaker's public commitments (at a full commitment level, as a default), as well as to the projected CGs, since they will be unchallenged and enter the CG, in the normal course of the conversation.

Finally, as with the separate *Won't you?* question, the preposed-negation interrogative tag adds a tentative commitment $\langle \text{will-Open}(\text{B,door}), [0.5, 0.8] \rangle$ to the speaker's commitment set DC_A .

The state of the scoreboard after the utterance (64) is nearly identical to the state of the scoreboard after the separate question in (58) as shown in column (ii) of (61). The only difference between them is the presence of a singleton issue on the Table underneath the top-level "will you? will you not?" issue introduced by the question, in the case of the two independent utterances, and the lack of this singleton issue in the stack for the tagged imperative. However, this final result for the tagged utterance is achieved without passing through the intermediate state in which the issue on the Table is only the singleton $\{\text{will-Open}(\text{B,door})\}$, and in which a minimal lack-of-objection response is sufficient to put $\text{will-Open}(\text{B,door})$ in the CG.

One aspect of the effect of (64) is that the tagged imperative is requesting a verbal response from the addressee—in this respect, the tag *won't you?* is functioning like a regular question. The tag creates a call on the addressee to respond through the general pragmatic pressure to resolve issues on the Table and move propositions towards the common ground (Ettinger & Malamud, 2015).

This call on the addressee is issued simultaneously with the speaker's (inferred high-level) commitment to $\Box^{f(c).g(c)} \text{Open}(\text{B,door})$, and tentative commitment to $\text{will-Open}(\text{B,door})$. In the meantime, $\text{will-Open}(\text{B,door})$ has not been accepted into the common ground yet. As with any question, different interpretations arise based on the motivation that the addressee infers for the speaker's issuing this call. For instance, if the call on the addressee is taken as the speaker seriously seeking input, this means that the addressee receives a share of authority and a more explicit choice of whether to actually open the door, simultaneously with the necessity of opening the door being introduced. When the tagged imperative is interpreted as a directive speech act, the result is that the directive is taken as a polite request. On the other hand, if it's clear that the speaker cannot be seriously asking for information or confirmation, then the call is taken as an attempt to get the hearer to explicitly acknowledge that they will comply with the directive.

Untagged imperatives that work well to express wishes²¹ have tagged versions that are very similar in meaning (65).

- (65) a. Have a nice vacation.
b. Have a nice vacation, won't you?

Since the future proposition is clearly not something that the hearer has knowledge about, the tag is not taken as a serious confirmation or information question. Hence the similarity in effect between the tagged and untagged version. As above, the call on the addressee contributed by the addition of the tag has the effect of eliciting an explicit response (compare with 'facilitating' uses of tags discussed by Holmes (1983)).

²¹ Deriving different readings of imperatives, including the wish readings, lies beyond the scope of this paper. See discussions in Kaufmann (2016), Condoravdi and Lauer (2012).

In analogy with untagged imperatives followed by an independent *Won’t you?* utterance, disinterested advice readings are not possible for tagged imperatives (66), presumably for the same reasons.

(66) How do I get to Harlem? – # Take the A train, won’t you?

4.4.2 The overall effect of tagged declaratives and comparison with preposed-negation questions

For declarative anchors tagged with *won’t you?* such as (53), the final state of the scoreboard is nearly identical to the two separate utterances such as (59). As with the imperatives, the only difference between the tagged utterance and a separate declarative followed by a PrepNegQ is the presence of a singleton issue on the Table underneath the top-level “will you? will you not?” issue introduced by the question, in the case of the two independent utterances, and the lack of this singleton issue in the stack for the tagged declarative.

Nevertheless, the difference between the tagged declaratives like (53) and an untagged declarative followed by a separate *Won’t you?* question is more pronounced than it is for the imperatives discussed above. That is because, in addition to the differences in the dynamics of the scoreboard, the untagged declarative utterance expresses a full public commitment to the at-issue proposition. However, in the case of the tagged utterance, there is no point at which the speaker is publicly fully committed to the anchor proposition $\{\text{will-Open}(B, \text{door})\}$, as the level of commitment for the tagged utterance is the average of what would be expressed by two separate utterances: a declarative and a PrepNegQ (cf. the discussion of this process in Sect. 4.3). The corresponding Table is shown in (67).

(67) Assuming an empty context: nothing noted in the commitments, the Table, or the CG
 A: You will open the door, won’t you?
 B: Yes

	(i) after A’s utterance	(ii) after B accepts
DC_A	$\{\langle \text{will-Open}(B, \text{door}), [0.74, 0.9] \rangle\}$	$\{\}$
DC_B	$\{\}$	$\{\}$
Table	$\{\langle \text{will-Open}(B, \text{door}), \neg \text{will-Open}(B, \text{door}) \rangle\}$	$\{\}$
CG	$\{\}$	$\{\text{will-Open}(B, \text{door})\}$
Proj. CGs	$\{\langle \text{for-sure-not-in-CG will-Open}(B, \text{door}), \neg \text{will-Open}(B, \text{door}) \rangle, \langle \neg \text{for-sure-not-in-CG will-Open}(B, \text{door}), \text{will-Open}(B, \text{door}) \rangle\}$	$\{\text{will-Open}(B, \text{door})\}$

As we compare the effect of the tagged declarative, modeled above in (67) with that of a PrepNegQ that’s not preceded by a corresponding declarative, such as the one

whose effects are detailed in (57) in Sect. 4.2, we can see that the only difference is the level of speaker commitment involved. Our model correctly predicts that the tagged declarative expresses a higher level of commitment than the PrepNegQ, as we observed in the empirical pattern introduced in Sect. 2.5.

At the same time, our proposal predicts that the two constructions share many properties, stemming from the fact that tagged declaratives and PrepNegQs both convey some level of speaker commitment to the at-issue proposition.

First, contradictory sequences are infelicitous, as we have seen in (52)–(53), and unlike rising declaratives (51) and rising imperatives (54).

Second, predictably, both tagged utterances and preposed-negation questions, unlike rising declaratives (68), are infelicitous in negative-bias contexts (69).

- (68) Rudin (2018a: ex.33), pointed out to him by Donka Farkas (p.c.)
 Donald Trump: I think I've made a lot of sacrifices. I work very, very hard...I've created thousands of jobs, tens of thousands of jobs, built great structures. I've had tremendous success. I think I've done a lot.
 George Stephanopoulos: Those are sacrifices?
- (69) a. # Those are sacrifices, aren't they?
 b. # Aren't those sacrifices?

Third, both tagged declaratives and preposed-negation questions licence "oh" responses, which express dependent commitment based on another interlocutor's independent public commitment (Gunlogson, 2008).

Along with these similarities, our pilot corpus annotation experiment indicated that there are some differences in the meaning expressed by the two constructions (cf. the empirical pattern described in Sect. 2.4), including, for some examples, which speech acts they can convey, e.g. in (70)–(71).

- (70) a. Now you'll sulk, won't you?
 b. Now won't you sulk?
- (71) a. You'll keep ratting on us, won't you?
 b. Won't you keep ratting on us?

The fact that the PrepNegQs in (70)–(71) can express directives, even though directives are infelicitous in the context, is not modeled directly in our proposal. We don't want to hardwire directiveness into the meaning of PrepNegQs since not all examples convey directive meaning. Instead, it can be derived via pragmatic reasoning from the context in these examples and the differences in commitment levels between the PrepNegQs and the tagged declaratives.

In contrast to our model, Krifka (2015) predicts significant differences in commitment patterns between the two constructions, but the specific predictions are not corroborated by the meaning differences uncovered in our study. For instance, Krifka (2015) predicts that a speaker of a high negation question, such as (26), repeated below, is asking the hearer to express a non-commitment towards the proposition that the hearer helps her. This is in direct contradiction with the request uses of such questions, as well as with most other examples of PrepNegQs in this paper.

(26) Won’t you help her?

5 Comparison with other approaches

5.1 Other approaches to imperatives

We base our analysis of imperatives tagged with *won’t you?* on Kaufmann’s semantics of imperatives. However, our claims about the semantics-pragmatics interface and pragmatic inferencing are relatively independent of the details of her analysis. For instance, as far as we can see, our proposal is compatible with the propositional analysis of imperatives proposed by Condoravdi and Lauer (2012). The only difference would be the content of the not-at-issue proposition that enters the speaker’s commitments. In fact, the effective preference structures proposed by Condoravdi and Lauer (2012) can be imported into Kaufmann’s semantics by serving as ordering sources for the modal proposition.

Starr (2010; 2012), Murray and Starr (2021) is a competing proposal for the semantics of imperatives that is, in fact, a unified approach to declarative, imperative, and interrogative clause types. On Starr’s approach, the content of the CG is not propositional, but rather, a preference state—a set of propositions with a preference ordering relation on them. An utterance dynamically updates this preference state, with the nature of the update depending on the clause type. A declarative clause updates the preference state to eliminate possible worlds incompatible with the at-issue proposition. An interrogative clause partitions the preference state according to Groenendijk and Stokhof’s (1984) question denotation. An imperative clause such as *Open the door!* imposes a preference for *you open the door* over *you don’t open the door*. Our discussion of speaker commitments translates directly to the dynamics of this preference state, except that speakers commit to preference states, rather than to propositions. The computation of the Table is a separate component altogether. The full details of a recasting of our proposal in a framework compatible with Starr (2010) lie beyond the scope of this paper.

AnderBois (2017) has proposed a model for modified imperatives which uses the Table model, and builds effective preferences directly into the conversational scoreboard, like Starr (2010). His proposal is that an imperative puts the effective preference $p > \neg p$ on the Table. If this proposal is accepted, this preference enters a novel scoreboard component, *Common Preferences*. However, we believe that the Table is not the correct place for proposed effective preferences, because they are not under discussion, as argued in Sect. 3.4.1.

A proposal by Portner (2018) builds on Portner’s (2004) model for imperatives, in which a component of the conversational scoreboard termed *To Do List* is updated with a (structured) proposition that the addressee fulfills the property expressed by the imperative. He proposes that functional variability of the imperatives can be captured by positing different types of scoreboard updates for “strong” imperatives such as commands and “weak” imperatives such as invitations, and posits that intonation serves as a cue for the different updates. On this approach, the scoreboard does not

represent the dynamic semantics of imperative clause types, but rather a pragmatics of speech acts. It is not clear to us that Portner's (2018) model successfully captures the functional variability of imperatives. Moreover, given the fundamentally pragmatic nature of the scoreboard in his proposal, we cannot easily recast our dynamic semantics for *won't you?* tags in Portner's framework.

The framework developed in Roberts (2018, 2021) unifies some of the above ideas about the semantics of imperatives (drawing most directly on Kaufmann (2012), Portner (2018)), as well as their pragmatics in her QUD model of discourse, which inspired the Table model. It may be a view in which our analysis of tag questions, and their interaction with declarative and imperative anchors, could be recast.

5.2 Other approaches to *won't you?* tags

English tag questions have received treatment in the Table model in prior scholarship, most notably in Malamud and Stephenson (2014) and Farkas and Roelofsen (2017). In addition, many related constructions have been analyzed in the model, including final rises on declaratives and imperatives (Farkas & Roelofsen, 2017; Malamud & Stephenson, 2014; Rudin, 2018a), utterance final particles in Mandarin (Ettinger & Malamud, 2015; Yuan & Hara, 2019), German (Clausen & Scheffler, 2020, 2022) and other languages, and evidentials (AnderBois, 2017; Faller, 2014). Two prior treatments of reverse-polarity tag questions in the Table model are in our opinion insufficient for capturing the empirical facts relating to *won't you?* described in this paper.

Malamud and Stephenson (2014) consider three utterance modifiers with declarative anchors: reverse-polarity tags, like (71a), rising intonation, and same-polarity tags, like (72), and their functions in American English.

(72) You'll just keep on ratting on us, will you?

To capture the distinct patterns of interlocutors' commitments in these constructions, Malamud and Stephenson (2014) extend the basic Farkas and Bruce (2010) framework to include the notion of projected commitment—propositions to which speakers expect themselves or their hearers to become publicly committed in the normal course of the conversation. They do not examine how the effects they propose come about based on the contributions of the anchor and the utterance modifier, and they do not consider non-declarative anchors.

Extending this work, Ettinger and Malamud (2015) consider the Mandarin utterance-final particle *ba* in comparison with the reverse-polarity *won't you?* in English. Both modifiers attach to a variety of speech acts and clause types, including directives. They propose a scoreboard which models speech acts, adopting the dynamic semantics of declarative, interrogative, and imperative clause types from Starr (2010). The model, however, is lacking any proposal for the semantics-pragmatics interface, which is necessary, since Starr's model is purely semantic. As a result, the Ettinger and Malamud (2015) proposal seems limited to modifiers attached to declarative assertions and imperative directives, blurring the lines between dynamic semantics of clause types and pragmatics of speech acts. Like Malamud and Stephenson (2014), the Ettinger and Malamud (2015) model is not compositional.

In contrast, our current proposal describes dynamic semantic updates derived from the contributions of the anchor and the tag, which serve as input to pragmatic reasoning leading to ultimate effects of the tagged declaratives and imperatives in context.

Our analysis has consequences for the semantics of two closely related constructions with positive tags: reverse-polarity tags attaching to negative anchors (73) and same-polarity tags attaching to positive anchors (74); we set aside analysis of anchors like (75).

- (73) a. Oh, you won't do that, will you? [BYU SOAP, OLTL 2009-09-01]
 b. If Lucy's there, don't mention my name, will you?
 [BYU SOAP, PC 2002-05-03]
- (74) a. You will handle it, will you? [BYU SOAP, GL 2003-05-06]
 b. Just give the boy a minute to dry off and catch his breath, will you?
 [BYU SOAP, GL 2005-08-08]
- (75) Why don't you tell him to back off, will you?
 [BYU SOAP, DAYS 2009-02-13]

If the relationship between the anchor and the tag is compositional at the level of sentential force (as modeled by the scoreboard update), the contribution of the anchor will compose with that of the tag in both constructions. The tags themselves could be interpreted in one of two ways, with slightly different predictions for each one.

First, the tag could be a plain polar question (albeit an elliptical one). This type of question would carry either no bias or a slight positive bias, and contribute either a very low level of commitment to the positive proposition, or no commitment either way. On this interpretation of the tag, it would contribute the issue $\{will-p, \neg will-p\}$ to the Table. By raising this issue, the positive tag in both constructions solicits the hearer's input on which proposition should be added to the Common Ground. If this solicitation is taken seriously, the tag could be interpreted as a marker of deference to the hearer and uncertainty in assertive utterances, and as a marker of deference and lowered social authority of the speaker with directives. With declarative anchors, the tag would also significantly lower the speaker's public commitment level to the negative anchor proposition in sentences like (73a), or to the positive anchor proposition in (74a).

Second, the tag could be interpreted as a VERUM question, an interpretation that has been independently proposed for polar questions with intonational focus on the auxiliary. Such a question, like the FALSUM operator in the preposed-negation tags, would contribute not only the issue of whether *will-p*, but also the not-at-issue possibilities *for-sure-CG will-p* and \neg *for-sure-CG will-p*, which will enter the Projected CGs that they are compatible with, bypassing the Table. These possibilities will give rise to the negative epistemic implicature, conveying the speaker's lower-level public commitment to the proposition $\neg will-p$. For the negative cases, this would result in a meaning that parallels our proposal for the preposed-negation tags: a level of commitment to the negative proposition that is lower than an unadorned negative declarative, but for the declarative anchor, higher than a non-tag VERUM question. This is a higher level of commitment than is predicted under the first possible interpretation of the tag.

For the positive anchor cases (74), the declarative anchor would contribute a commitment that is direct conflict with that implicated by the tag. How such conflicting

contributions affect the sentential force and ultimately the illocutionary force of the tagged utterance is a question we leave for future research; we likewise leave to future work the disentangling of the two possible interpretations of a positive tag.

The next steps in this line of research are to examine whether the model has enough “moving parts” to differentiate the semantic updates of various constructions within the same language and cross-linguistically. We suggest that some constructions in different languages that represent the same semantic update can produce different pragmatic effects due to cross-linguistic differences in the division of pragmatic labor between competing constructions. We plan to examine such potentially semantically synonymous but pragmatically distinct constructions in future work, in addition to testing our model against data from multiple related constructions within a single language.

6 Discussion and conclusion

In this paper, we put forward a model of the semantics-pragmatics interface, building on the Table model (Farkas & Bruce, 2010; Farkas & Roelofsen, 2017), that reflects the semantics of declarative, imperative, and interrogative clauses, and their composition to form tagged utterances. We see the conversational scoreboard as a model of sentential force, and thus mostly falling on the semantic side of the semantics-pragmatics interface (cf. Roberts, 1996; Farkas & Bruce, 2010; Malamud & Stephenson, 2014; Murray & Starr, 2021; Farkas & Roelofsen, 2017; Rudin, 2018a). The model captures both the grammatical and some somewhat more pragmatic aspects of sentential force (such as epistemic implicatures associated with the PrepNegQ construction), and serves as a starting point to more purely pragmatic calculations, accounting for indirect uses of declaratives and imperatives, beyond assertions and directives, respectively. We outline how these (indirect) speech act effects are derived by pragmatic computations on top of the more semantic sentential force, clarifying the dynamics of the semantics-pragmatics interface. In doing that, our model argues that linguistic form produces underspecified (rather than default) speech act interpretations, which pragmatics then helps clarify.

Through modeling imperatives with and without interrogative tags, we spell out the effect of not-at-issue commitments on the conversational scoreboard. In doing so, we provide additional evidence for the distinction between different notions of at-issueness (Koev, 2018): the first, the notion of providing a discourse referent for anaphoric uptake (cf. Murray, 2010), such as via a response particle, from the second, the notion of relevance to the QUD. Only the first of these is modeled by the scoreboard Table on our account.

These theoretical points emerge through an empirical investigation of *won't you?* tags. We provide an account of the meaning of these tag questions as regular reverse-polarity negative tag questions, which are in turn treated as elliptical negated polar questions. The tag forms a single unit with its anchor clause causing a single scoreboard update (cf. the first empirical pattern from Sect. 2). The meaning of this unit emerges compositionally from the meaning of the interrogative tag itself and the meaning of the imperative or declarative anchor. As a sentential force modifier, the tag cuts across

clause types (cf. the second empirical pattern from Sect. 2) and produces uniform effects regardless of the ultimate speech act expressed (cf. the third empirical pattern from Sect. 2). We note that untagged declaratives, preposed negation questions, and tagged declaratives convey a scale of public speaker commitments (cf. the fourth empirical pattern from Sect. 2), leading us to incorporate an interval representing the level of commitment to the at-issue proposition, rather than using a categorical distinction between full and tentative commitments (cf. Gunlogson, 2008; Davis et al., 2007; Scheffler 2013; Malamud & Stephenson, 2014; see Sect. 4.4.2). In developing this account, we also explore the effect of imperative clauses on the conversational scoreboard. Our analysis of *won’t you?* uses only the standard ingredients independently proposed for interrogatives, as well as imperatives and declaratives, recasting these prior accounts in our framework.

In particular, we combine the following proposals from prior work to model *won’t you?*-tag questions in American English: (i) Farkas and Bruce’s (2010) scoreboard approach for modeling plain declaratives in the anchor of tag questions and the polar interrogative tags themselves; (ii) the *FALSUM* operator in the scope of the question operator (Romero, 2015) for modeling preposed negation questions such as (the reduced interrogative) *won’t you?*; and (iii) Kaufmann’s (2016) analysis of imperatives as conveying the modal proposition $\Box^{fc,gc} p$. We combine these elements in the Table model, including a proposal for novel not-at-issue commitments, a commitment scale, and a model of how sentences composed of two different clause types can effect a single scoreboard update.

The empirical patterns presented by this construction turn out to be fully explainable once we examine them in light of their components, so recast. The resulting analysis is a first unified account of preposed-negation tags with both declarative and imperative anchor clauses, and the variety of resulting speech acts.

Acknowledgements We are grateful to the audiences of the DGfS workshop “Why indeed? Questions at the interface of theoretical and computational linguistics” (2018), the “Revisiting the Common Ground” conference at Princeton (2021), as well as at the Brandeis Linguistics and Computational Linguistics Colloquium and the University of Arizona Linguistics Colloquium (2022) for discussion of the issues studied in this paper. In preparing these talks, we were prompted to rethink our analysis. We thank Alex Lǘu for being part of our research process and discussions. Further, we’d like to thank the anonymous reviewers for their detailed and helpful comments, and Regine Eckardt for shepherding our paper through the process.

Funding Open Access funding enabled and organized by Projekt DEAL.

Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article’s Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article’s Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

References

- AnderBois, S. (2017). An illocutionary account of reportative evidentials in imperatives. *Proceedings of SALT*, 27, 459–479.
- AnderBois, S. (2019). Negation, alternatives, and negative polar questions in American English. In K. von Heusinger, M. Zimmermann & E. Onea (Eds.), *Questions in discourse* (pp. 118–171). Leiden: Brill. https://doi.org/10.1163/9789004378308_004.
- Bach, K. (1999). The myth of conventional implicature. *Linguistics and Philosophy*, 22(4), 327–366.
- Cattell, R. (1973). Negative transportation and tag questions. *Language*, 49(3), 612–639.
- Chierchia, G., & McConnell-Ginet, S. (2000). *Meaning and grammar: An introduction to semantics*. Cambridge, MA: MIT Press.
- Clausen, Y., & Scheffler, T. (2020). Commitments in German tag questions: An experimental study. In *Proceedings of the 24th Workshop on the Semantics and Pragmatics of Dialogue* (pp. 112–127). Virtually at Brandeis, Waltham, New Jersey: SemDial.
- Clausen, Y., & Scheffler, T. (2022). A corpus-based analysis of meaning variations in German tag questions: Evidence from spoken and written conversational corpora. *Corpus Linguistics and Linguistic Theory*, 18(1), 1–31. <https://doi.org/10.1515/cllt-2019-0060>.
- Condoravdi, C. (2002). Temporal interpretation of modals: Modals for the present and for the past. In D. I. Beaver, S. Kaufmann, B. Z. Clark, & L. D. Casillas (Eds.), *The construction of meaning* (pp. 59–88). Stanford: CSLI Publications.
- Condoravdi, C. (2019). Imperative strength. Lecture at *ESSLLI 2019*, August, 13, 2019, Riga.
- Condoravdi, C., & Lauer, S. (2012). Imperatives: Meaning and illocutionary force. *Empirical Issues in Syntax and Semantics*, 9, 37–58.
- Cormany, E. (2013). *A preference analysis of imperatives: Connecting syntax, semantics, and pragmatics*. Cornell University dissertation.
- Davies, M. (2010). The corpus of contemporary American English as the first reliable monitor corpus of English. *Literary and Linguistic Computing*, 25(4), 447–464.
- Davies, M. (2011). Corpus of American soap operas: 100 million words. Available online at <https://www.english-corpora.org/soap/>.
- Davis, C., Potts, C., & Speas, M. (2007). The pragmatic values of evidential sentences. *Proceedings of SALT*, 17, 71–88.
- Dehé, N., & Braun, B. (2013). The prosody of question tags in English. *English Language and Linguistics*, 17(01), 129–156. <https://doi.org/10.1017/S1360674312000342>.
- Eisenacher, L. (2016). Frageanhängsel an der Schnittstelle zwischen Pragmatik und Prosodie. B.Sc. thesis, Universität Potsdam, Germany.
- Ettinger, A., & Malamud, S. A. (2015). Mandarin utterance-final particle *ba* in the conversational scoreboard. *Proceedings of Sinn und Bedeutung*, 19, 232–251. <https://doi.org/10.18148/sub/2015.v19i0.840>.
- Faller, M. (2014). Reportativity, (not-)at-issueness, and assertion. *Proceedings of the Annual meeting of the Berkeley Linguistics Society*, 40, 62–84.
- Farkas, D., & Bruce, K. (2010). On reacting to assertion and polar questions. *Journal of Semantics*, 27(1), 81–118.
- Farkas, D., & Roelofsen, F. (2015). Polarity particle responses as a window onto the interpretation of questions and assertions. *Language*, 91(2), 359–414.
- Farkas, D. F., & Roelofsen, F. (2017). Division of labor in the interpretation of declaratives and interrogatives. *Journal of Semantics*, 34(2), 237–289.
- Frana, I., & Rawlins, K. (2019). Attitudes in discourse: Italian polar questions and the particle *mica*. *Semantics and Pragmatics*, 12, 16:EA. <https://doi.org/10.3765/sp.12.16>.
- Francez, I. (2017). Suggesterrogatives. Presentation at the Workshop “Questioning Speech Acts”, Konstanz, Germany.
- Frey, W. (2012). On two types of adverbial clauses allowing root-phenomena. In L. Aelbrecht, L. Haegeman, & R. Nye (Eds.), *Main clause phenomena: New horizons* (pp. 405–429). Amsterdam: Benjamins.
- Ginzburg, J. (1996). Dynamics and the semantics of dialogue. In J. Seligman & D. Westerståhl (Eds.), *Language, logic and computation* (vol. 1, pp. 221–237). Stanford: CSLI Publications.
- Ginzburg, J. (2012). *The interactive stance: Meaning for conversation*. Oxford: Clarendon Press.
- Grice, H. P. (1975). Logic and conversation. In P. Cole & J. L. Morgan (Eds.), *Syntax and semantics* (Vol. III, pp. 41–58). New York: Academic Press.

- Groenendijk, J., & Stokhof, M. (1984). *Studies on the semantics of questions and the pragmatics of answers*. University of Amsterdam dissertation. <http://dare.uva.nl/en/record/123669>.
- Gunlogson, C. (2003). *True to form: Rising and falling declaratives as questions in English*. New York: Routledge.
- Gunlogson, C. (2008). A question of commitment. *Belgian Journal of Linguistics*, 22, 101–136.
- Haegeman, L. (2004). The syntax of adverbial clauses and its consequences for topicalisation. *Antwerp Papers in Linguistics: Current Studies in Comparative Romance Linguistics*, 107, 61–90.
- Hamblin, C. L. (1971). Mathematical models of dialogue. *Theoria*, 37(2), 130–155.
- Hamblin, C. L. (1973). Questions in Montague grammar. *Foundations of Language*, 10(1), 41–53.
- Han, C., & Romero, M. (2002). Verum focus in negative yes/no questions and Ladd’s p-p ambiguity. *Proceedings of SALT*, 12, 204–224.
- Heim, I. (1982). *The semantics of definite and indefinite NPs*. University of Massachusetts at Amherst dissertation.
- Heim, J., Keupdjio, H., Lam, Z. W.-M., Osa-Gómez, A., Thoma, S., & Wiltchko, M. (2016). Intonation and particles as speech act modifiers: A syntactic analysis. *Studies in Chinese Linguistics*, 37(2), 109–129.
- Holmes, J. (1983). The functions of tag questions. *English Language Research Journal*, 3, 40–65.
- Holmes, J. (1984). Modifying illocutionary force. *Journal of Pragmatics*, 8(3), 345–365.
- Huddleston, R., & Pullum, G. K. (2002). *The Cambridge grammar of the English language*. Cambridge: Cambridge University Press. <https://doi.org/10.1017/9781316423530>.
- Jeong, S. (2018). Intonation and sentence type conventions: Two types of rising declaratives. *Journal of Semantics*, 35(2), 305–356. <https://doi.org/10.1093/jos/ffy001>.
- Kamp, H. (1981). A theory of truth and semantic representation. Reprinted in P. H. Portner & B. H. Partee (Eds.), *Formal semantics: The essential readings* (pp. 189–222). Oxford: Blackwell, 2002.
- Karttunen, L. (1977). Syntax and semantics of questions. *Linguistics and Philosophy*, 1(1), 3–44.
- Kaufmann, M. (2012). *Interpreting imperatives*. Berlin: Springer.
- Kaufmann, M. (2016). Fine-tuning natural language imperatives. *Journal of Logic and Computation*, 29(3), 321–348. <https://doi.org/10.1093/logcom/exw009>.
- Koev, T. (2018). Notions of at-issueness. *Language and Linguistics Compass*, 12(12), e12306.
- Korotkova, N. (2015). Evidentials and (relayed) speech acts: Hersay as quotation. *Proceedings of SALT*, 25, 676–694.
- Krifka, M. (2014). Embedding illocutionary acts. In T. Roeper & M. Speas (Eds.), *Recursion: Complexity in cognition* (pp. 59–87). Cham: Springer.
- Krifka, M. (2015). Bias in commitment space semantics: Declarative questions, negated questions, and question tags. *Proceedings of SALT*, 25, 328–345.
- Ladd, D. R. (1981). A first look at the semantics and pragmatics of negative questions and tag questions. In R. Hendrick, C. Masek & M. F. Miller (Eds.), *Papers from the 17th Regional Meeting Chicago Linguistic Society* (pp. 146–171). Chicago: Chicago Linguistic Society.
- Levinson, S. C. (1983). *Pragmatics* (Cambridge Textbook in Linguistics). Cambridge: Cambridge University Press. <https://doi.org/10.1017/CBO9780511813313>.
- Lewis, D. (1979). Scorekeeping in a language game. Reprinted in P. Portner & B. H. Partee (Eds.), *Formal semantics: The essential readings*, 162–177. Oxford: Blackwell.
- Lison, P., & Tiedemann, J. (2016). OpenSubtitles2016: Extracting large parallel corpora from movie and TV subtitles. In *Proceedings of the 10th International Conference on Language Resources and Evaluation, (LREC’17)* (pp. 923–929). Portorož: ELRA.
- Malamud, S. A., & Stephenson, T. C. (2014). Three ways to avoid commitments: Declarative force modifiers in the conversational scoreboard. *Journal of Semantics*, 32(2), 275–311. <https://doi.org/10.1093/jos/ffu002>.
- Malamud, S. A. (2006). *Semantics and pragmatics of arbitrariness*. University of Pennsylvania dissertation.
- Murray, S. E. (2010). *Evidentiality and the structure of speech acts*. Rutgers, The State University of New Jersey dissertation.
- Murray, S. E., & Starr, W. B. (2021). The structure of communicative acts. *Linguistics and Philosophy*, 44, 425–474. <https://doi.org/10.1007/s10988-019-09289-0>.
- Portner, P. (2004). The semantics of imperatives within a theory of clause types. *Proceedings of SALT*, 14, 235–252.
- Portner, P. (2018). Commitment to priorities. In D. Fogal, D. W. Harris & M. Moss (Eds.), *New work on speech acts*, (pp. 296–316). Oxford: Oxford University Press.

- Potts, C. (2006). Clausal implicatures via general pragmatic pressures. In T. Washio, A. Sakurai, K. Nakajima, H. Takeda, S. Tojo, & M. Yokoo (Eds.), *Japanese Society for Artificial Intelligence 2006* (pp. 205–218). Berlin: Springer.
- Reese, V., & Asher, N. (2007). Prosody and the interpretation of tag questions. *Proceedings of Sinn und Bedeutung, 11*, 448–462. <https://doi.org/10.18148/sub/2007.v11i0.657>.
- Repp, S. (2009). *Negation in gapping* (Oxford Studies in Theoretical Linguistics 22). Oxford: Oxford University Press.
- Repp, S. (2006). ¬(A&B). gapping, negation and speech act operators. *Research on Language and Computation, 4*, 397–423. <https://doi.org/10.1007/s11168-006-9022-y>.
- Repp, S. (2013). Common ground management: Modal particles, illocutionary negation and verum. In D. Gutzmann & H.-M. Gärtner (Eds.), *Beyond expressives: Explorations in use-conditional meaning* (pp. 231–274). Leiden: Brill.
- Roberts, C. (1996). Information structure in discourse: Towards an integrated formal theory of pragmatics. In *OSU Working Papers in Linguistics, 49: Papers in semantics*, (pp. 91–136) The Ohio State University Department of Linguistics. <http://www.ling.ohio-state.edu/~croberts/infostr.pdf>. [Slightly amended version, 1998].
- Roberts, C. (2018). Speech acts in discourse context. In D. Fogal, D. W. Harris, & M. Moss (Eds.), *New work on speech acts* (pp. 317–359). Oxford: Oxford University Press.
- Roberts, C. (2021). Imperatives in a dynamic pragmatics. Manuscript. <https://semanticsarchive.net/Archive/zgwYmFmN/>.
- Romero, M. (2006a). Biased yes/no questions: The role of verum. *Sprache und Datenverarbeitung, 30*(1), 9–24.
- Romero, M. (2015). High negation in subjunctive conditionals and polar questions. *Proceedings of Sinn und Bedeutung, 19*, 519–536. <https://doi.org/10.18148/sub/2015.v19i0.247>.
- Romero, M., & Han, C.-H. (2004). On negative Yes/No questions. *Linguistics and Philosophy, 27*(5), 609–658.
- Rudin, D. (2018a). *Rising above commitment*. UC Santa Cruz dissertation.
- Rudin, D. (2018b). Rising imperatives. *Proceedings of SALT, 28*, 100–119.
- Sailor, C. (2013). Questionable negation. In Presentation at *LSA Annual Meeting*, 3 January 2013, <https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.704.1348&rep=rep1&type=pdf>.
- Scheffler, T. (2008). *Semantic operators on different dimensions*. University of Pennsylvania dissertation.
- Scheffler, T. (2013). *Two-dimensional semantics: Clausal adjuncts and complements* (Linguistische Arbeiten 549). Berlin: de Gruyter.
- Schwager, M. (2006a). Conditionalized imperatives. In C. Tancredi, M. Kanazawa, I. Imani & K. Kusumoto (Eds.), *Proceedings of SALT, 26*, 241–258.
- Schwager, M. (2006b). *Interpreting imperatives*. University of Frankfurt/Main dissertation. Revised as Kaufmann (2012).
- Searle, J. R. (1975). Indirect speech acts. In P. Cole & J.L. Morgan (Eds.), *Syntax and semantics*, vol. 3: *Speech acts* (pp. 59–82). New York: Academic Press.
- Searle, J. R. (1965). What is a speech act. Reprinted in R. J. Stainton (Ed.), *Perspectives in the philosophy of language: A concise anthology*, (pp. 253–268). Calgary: Broadview Press, 2000.
- Searle, J. R. (1969). *Speech acts: An essay in the philosophy of language*. Cambridge: Cambridge University Press.
- Stalnaker, R. (1978). Assertion. In P. Cole (Ed.), *Syntax and semantics 9: Pragmatics* (pp. 315–332). New York: Academic Press.
- Starr, W. B. (2010). *Conditionals, meaning and mood*. Rutgers, The State University of New Jersey dissertation.
- Starr, W. B. (2012). A preference semantics for imperatives. Presentation at *Workshop in philosophy of language and semantics*, University of Chicago.
- Tottie, G., & Hoffmann, S. (2006). Tag questions in British and American English. *Journal of English Linguistics, 34*(4), 283–311. <https://doi.org/10.1177/0075424206294369>.
- Walker, M. A., Joshi, A. K., & Prince, E. F. (1998). Centering in naturally occurring discourse: An overview. In M. A. Walker, A. K. Joshi, & E. F. Prince (Eds.), *Centering theory in discourse* (pp. 1–28). Oxford: Clarendon Press.
- Wiltshcko, M., Denis, D., & D’Arcy, A. (2018). Deconstructing variation in pragmatic function: A trans-disciplinary case study. *Language in Society, 47*(4), 569–599.

Yuan, M., & Hara, Y. (2019). Guiding assertions and questions in discourse. *Natural Language & Linguistic Theory*, 37(4), 1545–1583.

Publisher’s Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.