

Chapter 5

Paradigms and discourse effects of English rising declaratives

Junseon Hong

Stanford University

The aim of this paper is to make a predictable model for rising declaratives (RDs) based on the division of labor between semantics and pragmatics. Building on the major classification of RDs into assertive and inquisitive (Jeong 2018), I first explore a wide range of different functions of RDs. Then, I show how each subtypes of RDs are interpreted by the interaction of conventional meaning and pragmatic reasoning, based on extended Lewisian model. The key proposal lies on the contributions of rising intonation on discourse effects, both on semantic content and projection of commitments.

1 Introduction

In all languages, there is a significant correlation between three grammatical moods and speech acts they issue (Roberts 2018): declaratives provide information, interrogatives request information, whereas imperatives issue a direction. Within these three moods, the former two are associated with speech acts that are related to changing the discourse context, which are assertions and questions. That is, they are basic direct speech acts that are used to exchange information, and each canonically aligns with a distinct syntactic form in English: assertions with falling declaratives and questions with polar interrogatives.¹ However, rising declaratives (henceforth, RDs), such as (1), are non-canonical structures that accompany declarative sentences with rising intonation.

¹Note that polar interrogatives are not the only type of interrogatives. There are other major classes of interrogatives, illustrated as follows (Ciardelli et al. 2018):

- (i) a. Is he attractive[↑] or charming[↑]?

ALTERNATIVE INTERROGATIVES



(1) *She's home?*

Due to their linguistic mismatch, RDs highlight the complex pattern of phonetic, syntactic, semantic, and pragmatic interface. Compared to canonical clause types, it is widely recognized that RDs provide further information beyond the expressed proposition (e.g., Gunlogson 2003, 2008, Malamud & Stephenson 2015, Farkas & Roelofsen 2017, Jeong 2018, Rudin 2022). Still, RDs share similarities in their speech acts with both of the two canonical types: falling declaratives, as in (2a), and polar interrogatives, as in (2b), since they possess properties of both (Jeong 2018).

- (2) a. Assertive rising declaratives: overlap with assertions
 [Context: A asks B where Sally is. B is not sure of Sally's whereabouts:]
 A: Where's Sally?
 B: (Um...) *She's home?* / *She's home.* / #*Is she home?*
- b. Inquisitive rising declaratives: overlap with questions
 [Context: Sally has been skipping school without any specific reason. B has just come back from work and A wants B to speak with Sally immediately about her issues.]
 A: You should speak to Sally right away.
 B: *She's home?* / #*She's home.* / *Is she home?*

An RD in (2a) functions as an assertion, in which Speaker B responds to the addressee's question by providing information without a concrete certainty. In contrast, an RD in (2b) functions like a question implicating that the uttered proposition is highly likely. From this contrast, RDs can be respectively substituted with either falling declaratives or polar interrogatives. I refer to the former as ASSERTIVE RISING DECLARATIVES (henceforth, ARDs) and the latter as INQUISITIVE RISING DECLARATIVES (henceforth, IRDs), following Jeong (2018).

The central question that arises from this phenomenon is how to account for the two distinct types. To answer this question, a few previous approaches seek a unified account (e.g., Rudin 2022), while others focus on more specific types of RDs, acknowledging the existence of other types (e.g., Farkas & Roelofsen 2017). Jeong (2018) is the first approach arguing for two fundamentally different types

b. Is he attractive[↑] or charming[↑]?

OPEN DISJUNCTIVE INTERROGATIVES

c. Who is attractive?

CONSTITUENT INTERROGATIVES

For the purposes of this paper, I restrict my discussion to polar interrogatives, which specifically ask for the truth value of the expressed proposition, and omit others from consideration.

of RDs. This paper further extends her idea. I propose a model that delineates the role of semantics and pragmatics, based on the exploration of diverse types of RDs that have not been widely discussed.

This paper is structured as follows: Section 2 takes a close look at four specific functions of RDs that can convey either assertive or inquisitive meanings. Section 3 introduces the adopted framework and outlines relevant approaches. Section 4 draws the detailed contributions of rising intonation in the interpretation process of RDs, and Section 5 explains how each function can be drawn from the interaction of sentence type, conventional intonation, and discourse context. Finally, Section 6 concludes.

2 The pattern of rising declaratives

This section provides a brief discussion of the empirical patterns of RDs, which perform the speech act of either asserting or questioning. Let us begin with the first type, ARDs. I propose two paradigms of ARDs in terms of the uncertainty they implicate: epistemic and metalinguistic.

- (3) a. Epistemic Uncertainty ARD
 A: Where's Sally?
 B: (Um...) *She's home?*
- b. Metalinguistic Uncertainty ARD
 A: Does he speak Chinese?
 B: *He speaks Cantonese?*

The distinction between the two comes from whether the speaker is conveying uncertainty about the truth condition of the proposition or other aspects. (3a) indicates the speaker's tentativeness on the truth value of the expressed proposition. In contrast, (3b) conveys an uncertainty of the relevance to the context, which is not directly associated with the truth value of the proposition: the speaker is unsure whether they are giving an adequate answer to the prior question.

Modal substitution and subordination are two pieces of evidence for the two subtypes of ARDs. First, Epistemic Uncertainty ARDs can be freely substituted with epistemic modals, while Metalinguistic Uncertainty ARDs cannot, as in (4).

- (4) a. Epistemic Uncertainty ARD
A: Where's Sally?
B: (Um...) *She's home?* (necessarily means 'She **may** be home.')
- b. Metalinguistic Uncertainty ARD
A: Does he speak Chinese?
B: *He speaks Cantonese?*
(does not necessarily mean 'He **may** speak Cantonese.')

Second, parallel behaviors of Epistemic Uncertainty ARDs and epistemic modals are also observed in terms of modal subordination (Roberts 1987, 1989). An Epistemic Uncertainty ARD can be followed by a modal utterance, as in (5a), while a Metalinguistic Uncertainty ARD does not exhibit modal subordination, as in (5b).

- (5) a. Epistemic Uncertainty ARD
A: Where's Sally?
B: (Um...) *She_i's home?* She_i **must** have come from school early.
- b. Metalinguistic Uncertainty ARD
A: Do you speak Chinese?
B: *He_i speaks Cantonese?* #He_i **must** be born in Hong Kong.

I also follow Jeong (2018, 2021)'s approach that each type of ARDs can bear politeness, often used as a rapport-building process (Podesva 2011, Levon 2016, Jeong 2018, 2021).² Each politeness use in (6a) and (6b) corresponds with the paradigm of ARDs in (3a) and (3b), respectively.³ A more detailed analysis will be provided in Section 5.1.

- (6) Politeness effect invoked by ARDs
- a. Epistemic Uncertainty Politeness
A: Do you want a glass of water?
B: *I'll have a wine?*

²RDs can be used as conversational starters, as shown in (i) below.

(i) A: Hello, *my name is David? I'll be your waiter today?*

Jeong (2021) suggests that this usage may be allowed because checking in to see if the new topic is relevant or informative appears to be more polite than not checking in. I argue that this is closely related to metalinguistic uncertainty.

³An anonymous reviewer points out that, in French, lexical material is necessary to make dialogues like (6a) well-formed. While I acknowledge potential differences in the role of intonation in conveying certain meanings or intentions, I leave cross-linguistic generalization for future research.

b. Metalinguistic Uncertainty Politeness

A: Which city is Lenny from?

B: (to the supervisor) *She's from Yemen?*

Two paradigms are contrasted for IRDs as well, according to the bias, as illustrated in (7).⁴

(7) a. Confirmative IRD

[Context: B is buying a ticket for a flight to Seoul at the airport.]

A: There's one flight to Seoul.

B: *The flight leaves at 5pm?*

b. Contradictory IRD

A: I went to the concert last night. Dave is a good singer.

B: *Dave is a good singer?* You must be thinking about Anna.

c. Mirative IRD

[Context: B thought that Dave is the only child in his family.]

A: I met Anna's brother yesterday.

B: (What?) *She has a brother?*

(7a) and (7b) differ in terms of the speaker's epistemic bias toward the expressed proposition. The former illustrates the speaker's high degree of certainty on the expressed proposition. As this type of IRDs is used to confirm the speaker's prediction (7a), they are named CONFIRMATIVE IRDs.⁵ In contrast, the latter implicates the speaker's disbelief in the proposition as it is to ask a question with high suspicion. As this type of IRDs contradicts the addressee's expressed or presupposed content (7b), I call it CONTRADICTIONARY IRDs.⁶ Additionally, IRDs that convey the speaker's surprise are classified as a subtype of Contradictory IRDs (c.f., Goodhue 2021). In (7c), the speaker is surprised by the expressed proposition and a surprised speaker would not have prior knowledge or belief that the proposition is true, which is related to a negative bias.⁷ As they implicate mirativity, they are named MIRATIVE IRDs.

⁴The rise of IRDs is steeper than that of ARDs. See Jeong (2018)'s experimental result in Section 3.2.4.

⁵The overall contrast is first brought up in Gunlogson (2003, 2008), though may not in the exact labels.

⁶There are also other clause types that indicate bias, which include negative polar questions and tag questions. While space precludes a detailed discussion, interested readers may consult Romero & Han (2004), Malamud & Stephenson (2015), Farkas & Roelofsen (2017), Frana & Rawlins (2019), Goodhue (2022) and references therein.

⁷An anonymous reviewer points out that Mirative IRDs may not be necessarily related to negative bias and could instead be associated with the absence of bias. For a more discussion on the difference between negative bias and the absence of bias, see Sudo (2013).

The negative bias of Contradictory IRDs can be emphasized by an overt dissent expression such as *No way* (8b), while Confirmative IRDs cannot be followed by such expressions (8a).

- (8) a. Confirmative IRD
 [Context: Same as (7a).]
 A: There's one flight to Seoul.
 B: *The flight leaves at 10am?* #No way.
- b. Contradictory IRD
 A: Dave is a good singer.
 B: *Dave is a good singer?* No way.

The distinctive bias of each IRD also leads to a difference in the licensed particle responses, analogous to positive and negative polar questions (Roelofsen & Farkas 2015). Bare particle responses to positive polar questions are unambiguous while those to negative polar questions are ambiguous. The same phenomenon is observed for IRDs.

- (9) [Context: Same as (7a).]
 A: There's one flight to Seoul.
 B: *The flight leaves at 10am?*
- a. A: {Yes / #No}, it does. [AGREE, +]
 b. A: {#Yes / No}, it doesn't. [REVERSE, -]
- (10) A: Dave is a good singer.
 B: *Dave is a good singer?*
- a. A: {Yes / No}, he isn't. [AGREE, -]
 b. A: {Yes / No}, he is. [REVERSE, +]

As in (9) and (10), particle responses bear two features: [+ , -] and [AGREE, REVERSE] (Roelofsen & Farkas 2015). The former are absolute features whereas the latter are relative features. Absolute features are responses for being positive or negative about the truth value of the prejacent proposition, while relative features are responses for agreeing or reversing. The bare particle response *yes* signals [AGREE] and [+], while *no* signals [REVERSE] and [-]. Aligning with this distinction, in (9), *yes* is an acceptable response according to the features [AGREE] and [+] (9a), while *no* is acceptable with [REVERSE] and [-] (9b), identical to positive polar questions. In contrast, Contradictory IRDs can have both (10a) and (10b) as felicitous responses, and thus particle responses are ambiguous like negative polar questions: *no* in (10a) confirms $\neg p$, but *no* in (10b) rejects $\neg p$.

3 Background

3.1 Framework

Before turning into the formalization, this section briefly introduces a framework widely accepted for capturing the conventional effects of sentence types and their associated discourse moves. Since Lewis (1979) introduced conversational scoreboard, extended and enriched models have been developed in the literature (e.g., Farkas & Bruce 2010, Malamud & Stephenson 2015, Rudin 2022). I also adopt the discourse components proposed by Farkas & Bruce (2010) and Malamud & Stephenson (2015).

The Common Ground (henceforth, *CG*) is a set of commitments shared by discourse participants and is assumed to play a significant role in tracking participants' commitments throughout the discourse (Stalnaker 1978). Generally, the role of the discourse is often considered as expanding the *CG* and reducing the context set (henceforth, *cs*). However, subsequent works have identified a limitation of Stalnakerian *CG* in its incapability to represent the individual commitment of each participant with a single set. For example, Gunlogson (2003) defends the necessity of separate tracking of each participant's commitments. Following her idea, Farkas & Bruce (2010) set each participant's discourse commitment (henceforth, DC_X) apart from the *CG*, while the *CG* is reserved as a set of propositions that all interlocutors have agreed upon. Each interlocutor has individual DC_X which is a belief of one's own, having a possibility to be added to the *CG*. Thus, the total commitment of speaker *X* throughout the discourse is $DC_X \cup CG$. This commitment is doxastic by default and does not need to be true in the world where the conversation takes place.⁸

In the process of discourse, the *Table* records the Question Under Discussion (henceforth, *QUD*; Ginzburg 1996, Roberts 1996, 2012). In other words, the *Table* is a stack that records 'at-issue' items. When the item is added to the *Table*, the speaker projects possible future *CG*, which is called the projected Common Ground (henceforth, CG^*). For example, an assertion projects the expressed proposition *p* to the *CG* ($CG^* = \{CG \cup \{p\}\}$) and a polar question projects each of two possibilities, *p* or $\neg p$ ($CG^* = \{CG \cup \{p\}, CG \cup \{\neg p\}\}$). The projected commitments of discourse participants (henceforth, DC_X^*) are defined as analogous to the CG^* . Malamud & Stephenson (2015) posit the DC_X^* to allow the moves for tentative commitments of the speaker (speaker's projected commitment; henceforth,

⁸There are different assumptions for other types of speech acts. For example, the speaker of an imperative is assumed to have preferential commitments (Condoravdi & Lauer 2012, Rudin 2018a,b).

DC_{sp}^*) or the speaker's best guess on commitments of the addressee (addressee's projected commitment; henceforth, DC_{ad}^*).⁹

A cooperative discourse participant would remain consistent with their doxastic commitments in a single discourse move (Krifka 2015). I also suppose that the DC_X^* should be consistent throughout the discourse, along with the present ones (i.e., $\cap DC_X \neq \emptyset$, $\cap DC_X^* \neq \emptyset$, and $\{\cap DC_X\} \cap \{\cap DC_X^*\} \neq \emptyset$). If the commitment, whether present or projected, is restricted to worlds where p is true, the worlds where p does not hold are eliminated. As a result, the intersection with worlds where p does not hold is bound to be empty, which is an unexpected outcome considering that the discourse aims to expand the CG .

The discussion up to this point is summarized in (11).

(11) Discourse Components

- a. Common Ground (CG): the set of propositions that all speakers are publicly committed to (Stalnaker 1978).
- b. Discourse Commitment (DC_X): the set of propositions that the speaker has publicly committed to during the conversation up to the relevant time, and which are not shared by all the other participants (Farkas & Bruce 2010).
- c. Table (T): the stack that records the at-issue content in the conversation (Farkas & Bruce 2010).
- d. Projected Common Ground (CG^*): the set of potential CG s that gives possible resolutions for the top issue on the *Table* in the next expected stage of the conversation (Farkas & Bruce 2010, Malamud & Stephenson 2015).
- e. Projected Discourse Commitment (DC_X^*): the set of propositions that the speaker is expected to become committed to or the best guess of commitments made by other interlocutors (Malamud & Stephenson 2015).

3.2 Previous approaches

Numerous accounts of RDs have been proposed based on the components introduced above. Although the space precludes comprehensive overview of every approach, I will investigate a few representative analyses. All of these approaches involve both semantics and pragmatics, though the exact allocation between the two varies.

⁹When the DC_X and the DC_X^* are contrasted, I refer to the former as the *present* commitment.

3.2.1 Gunlogson (2003, 2008)

Gunlogson (2003) supposes commitment requirements for both falling and rising declaratives, but the former type locates the commitment to the speaker while the latter type locates it to the addressee. Consequently, falling declaratives update the speaker's commitment set, whereas rising declaratives update the addressee's commitment set. She also supposes that contextual evidence should support the addressee's commitment to make RDs felicitous. By attributing the commitment to the addressee while leaving the speaker's commitment open, the speaker can exhibit bias toward or commitment to $\neg p$. However, it remains unclear for cases where the speaker lacks contextual evidence on the addressee's commitment to the expressed proposition.

Her later work (Gunlogson 2008) focuses on biased questions in out-of-blue contexts that function as questions with the speaker's commitment being contingent on the addressee's. This concept can properly capture Confirmative IRDs with a positive bias of the addressee's commitment. However, as pointed out by Jeong (2018), negative epistemic bias that could previously be explained by Gunlogson (2003) cannot be predicted anymore. It is also unclear how her approaches can be expanded to ARDs which seem to be more related to speaker-oriented commitments.

3.2.2 Malamud & Stephenson (2015)

Malamud & Stephenson (2015) develop an analysis of the tentativeness expressed by RDs in terms of projected commitment sets and metalinguistic issue (henceforth, $MLIP$), which is an inquisitive issue having a non-singleton set. The core effect of RDs consists of adding $MLIP$ and p to the *Table* and adding p to the DC_{sp}^* . Since $MLIP$ takes the priority to be added to the stack, its two possible resolutions must precede the resolution of p .¹⁰ That is, the issue regarding $\{p\}$ can only be taken into consideration after the resolution of $MLIP$. Moreover, unlike canonical assertions, the proposition p is added to the DC_{sp}^* in the first place, and if the addressee uptakes the move and resolves the $MLIP$ on the *Table*, it would be moved to the DC_{sp} . Provided with the addressee's ratification, the resulting effect would be very similar to simply asserted p in the first place. This approach is advantageous for predicting ARDs. However, it is insufficient to capture IRDs, especially Contradictory IRDs where the speaker is not committed to the proposition, but its negation ($\neg p$). One might attempt to apply the notion of $MLIP$ to negatively

¹⁰ Often, only two possible resolutions for $MLIP$ ($R1$ and $R2$) are assumed for the sake of simplicity, but there can be more than just two potential resolutions.

biased RDs, but to the best of my knowledge, it has nothing to do with reversing the interlocutor's epistemic bias.

3.2.3 Farkas & Roelofsen (2017)

Farkas & Roelofsen (2017) present the discourse effects of IRDs, couched in the Inquisitive Semantics framework (Ciardelli et al. 2013, 2018). Their approach narrows the scope to IRDs and assumes ARDs are of a different nature. IRDs share the inquisitive sentence radical with rising polar interrogatives, while the former is more marked than the latter. As their special effect, IRDs signal the credence level of the speaker, which is zero to low. Their model has an advantage in negative bias with zero evidence of Contradictory RDs. That is, the speaker's negative bias is implied by having low credence at best (i.e., a preference for $\neg p$ over p).

However, in their analysis it seems difficult to capture the case with a positive bias. In a positively biased case, the speaker assumes that p is more probable than $\neg p$: the credence level seems to be higher than the average.

3.2.4 Jeong (2018)

Jeong (2018) makes a clear distinction between two types of RDs, which are classified as either tentative assertions or as biased questions based on intonational structures. Rising intonations, RISE-A (assertive rises) and RISE-I (inquisitive rises), call for a marked interpretation of morphosyntactically declarative utterances. ARDs are marked because they are essentially assertive but are paired with rising intonation, while IRDs are marked because they are essentially inquisitive but are paired with declarative syntax. For ARDs, MLI^P added to the *Table* is what makes them differ from canonical falling declaratives. As MLI^P is at the top of the table, it must be resolved prior to p , identical to Malamud & Stephenson (2015). For IRDs, they have the same sentence radical as polar interrogatives which are contributed from RISE-I, but update the positive answer p to the DC_{ad}^* . This account is assumed to predict both positive and negative bias, the latter resulting from redundancy, which triggers the pragmatic reasoning that the speaker has a reason to elicit further explanation or justification from the addressee.

However, it is not clear how this account can be expanded to cases when the addressee's present and projected commitment sets are not redundant, yet the speaker conveys a negative bias. To properly account the negative bias, the analysis to come entertains an alternative way of relaxing 'prior addressee utterance

that entails p' to 'prior contextual information that addressee thinks that p' '.¹¹ Nonetheless, the overall idea that the inference of negative bias arises in cases where the prior context is such that the addressee is pivoted toward p (instead of being neutral) still holds.

3.2.5 Rudin (2018a, 2022)

Adopting Jeong (2018)'s key distinction between two fundamental types of RDs, Rudin (2018a) presents a formal pragmatic examination, drawing on Farkas & Bruce (2010). He assumes that falling intonation adds the informative content of a sentence in the speaker's commitment and rising intonation adds W , the denotation of $\{p, \neg p\}$ that makes the commitment trivial. He also assumes a pragmatic competition between discourse move minimal pairs. Falling declaratives and RDs constitute a minimal pair, but the distinction lies in the fact that the former type commits the speaker to p while the latter type does not, because of the conventional effect of the rising intonation. RDs also constitute a minimal pair with rising polar interrogatives, only differing in whether $\neg p$ is contained in the issue. The specific convention of RDs stems from the competition between their second minimal pair, rising polar interrogatives. If the speaker chooses an RD, a polar interrogative would be uncooperative. The only source for being uncooperative is $\neg p$, since they both contain p . Also, as the speaker chose not to commit to p (from the effect of the rising tune), it should be the addressee's private beliefs that prevent p to be added to the CG. To put it together, the speaker expects the addressee to say p is true, soliciting the addressee to commit to p . Meanwhile, the bias of RDs arises from the pragmatic competition with the other element of the minimal pair, falling declaratives, which differs in whether the speaker commits to p . The speaker has limited evidence (positive bias) or the speaker knows the proposition is false (negative bias). Rudin (2022) extends this idea by applying pragmatic analysis using the style of Optimality Theoretic tableaux.

However, expanding his account to ARDs, with which the speaker apparently gives new information, is left open. The issue seems to be more complicated when metalinguistic issues are involved. He would say that the rising tune associated with ARDs is associated with a different convention, but its exact nature requires further clarification, as he explicitly mentions that the discussion is restricted to IRDs.

¹¹Related discussion will be presented in Section 5.2.

4 Contributions of rising intonation

Previous researchers have made various proposals on the effect of rising intonation in RDs: (i) eliminating commitments (e.g., Gunlogson 2008, Rudin 2018a, 2022), (ii) adding metalinguistic issues (e.g., Malamud & Stephenson 2015), (iii) indicating the violation of Gricean Maxims (e.g., Westera 2017, 2018), or (iv) composing markedness (e.g., Farkas & Roelofsen 2017). Instead, I propose that rising intonation overrides the convention of falling declaratives as in (12) in two ways: (i) conventionally increasing the inquisitive content of the proposition, and (ii) contextually projecting discourse components. That is, assertive and inquisitive meanings are conventionally derived, while specific functions are determined by the pragmatic reasoning.

(12) Convention of falling declaratives

- a. $Table_o = Table_i \cup \{p\}$
- b. $DC_{sp, o} = DC_{sp, i} \cup \{p\}$

4.1 Semantic convention

To elaborate the effect of rising intonation on semantic content, I adopt the framework of Inquisitive Semantics (Ciardelli et al. 2013, 2018, and references therein). This framework posits that a sentence not only conveys informative content but also expresses inquisitive content by raising an issue. To illustrate, consider Figure 1. Purely informative propositions are represented on the horizontal axis, where inquisitive content is trivial. For example, falling declaratives are non-inquisitive by default. Meanwhile, propositions on the vertical axis are purely inquisitive. Rising polar interrogatives are basically non-informative with informative content being trivialized. All other propositions, of which informative and inquisitive content are both non-trivial, are located off the axes.

Since the convention of each RDs partially overlaps with the corresponding two canonical sentence types, I argue that both the informative content and inquisitive content of RDs are not trivial. Therefore, I place RDs off the axes where neither informative content nor inquisitive content is trivial, as illustrated in Figure 2.¹² This figure illustrates that ARDs are more informative than inquisitive, while IRDs are more inquisitive than informative. ARDs are located closer to the informative horizontal axis than to the inquisitive vertical axis, demonstrating

¹²I suppose other types of non-canonical interrogatives (e.g., tag questions, negative polar questions) can also be located off the axes. Due to space limitations, further discussions on other types are left for future work.

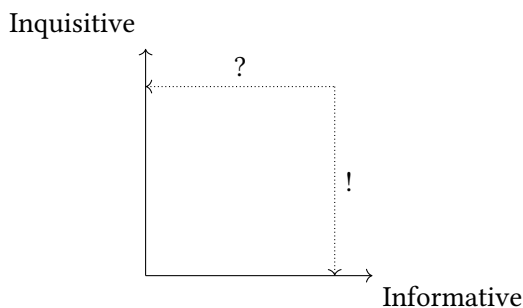


Figure 1: Informative content and inquisitive content

that they are more informative than inquisitive. While primarily remaining informative, ARDs are less informative than canonical falling declaratives as they are tentative assertions. On the other hand, the pattern is reversed for IRDs, as they are located closer to the inquisitive vertical axis: IRDs exhibit more inquisitiveness than informativeness. Compared with canonical rising polar interrogatives, IRDs are more informative since they convey additional information on the bias.

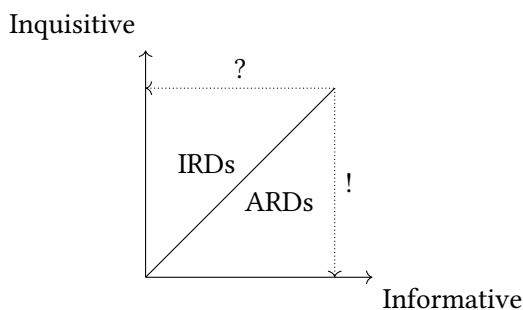


Figure 2: Informative content and inquisitive content of RDs

The distinction between two RDs reflects that ARDs denote a singleton set $\{p\}$ like falling declaratives (Hamblin 1971), whereas IRDs denote a non-singleton set $\{p, \neg p\}$ like polar interrogatives (Karttunen 1977). This difference between singleton and non-singleton sets arises from the effect of rising intonation, which increases the inquisitiveness of the semantic content. According to Jeong (2018)'s experimental results, lower rise with a high nuclear pitch accent (H*H-H%) indicates ARDs, while a steeper rise with a low nuclear pitch accent (L*H-H%) is related to IRDs. I further propose that a weak rise increases inquisitive content up to the point where it is no higher than informative content, maintaining the

proposition primarily informative with a singleton set. In contrast, with a steep rise, inquisitive content surpasses informative content, and thus the content is shifted to a non-singleton set, turning the speech act of a clause into a question. As a result, ARDs denote $\{p\}$, whereas IRDs denote $\{p, \neg p\}$, aligning with our intuitive observation that ARDs are *assertion-like* while IRDs are *question-like*.

4.2 Discourse components

The second contribution of rising intonation is projecting discourse components. The idea is that the update convention of commitments is not completely restricted syntactically. The notion that a clause type does not deterministically constrain the commitments aligns with the perspective of Beyssade & Marandin (2006). They propose that the default case, in which the speaker's commitment aligns with their call on the addressee, can be hybrid. Similarly, I intend to come up with a model that allows a syntactic structure to be involved in a twofold update. However, unlike theirs, my model does not necessarily require that a declarative clause updates the speaker's commitment, and is closer to the approaches of Gunlogson (2008) and Rudin (2018b, 2022), with a few modifications.

Gunlogson (2008) proposes that rising intonation indicates contingent commitment, which is dependent on the addressee's commitment. However, RDs need not always be dependent on the prior utterance of other interlocutors, as in (13).

- (13) [Context: A and B made plans two days ago to get drinks tonight. They haven't spoken about it since.]
A: *We're still on for tonight?*

The IRD in (13) does not require the addressee's prior utterance but it is merely the speaker's expectation toward the addressee (i.e., DC_{ad}^*) which differs from Gunlogson's (2008) contingent commitment. It demonstrates that, although the speaker assumes that the addressee is committed to p , it does not necessarily imply that the commitment is contingent.

As summarized in Section 3.2.5, Rudin (2018a, 2022) argues that final rising tone in an RD indicates the speaker's lack of commitment to its expressed proposition. Following some core ideas of his view, I analyze rising intonation as modifying the status of commitments. However, in my proposal, rising intonation projects commitments, rather than indicating a lack of commitment. For example, the speaker can project p to either their own commitment (DC_{sp}^*) or the addressee's (DC_{ad}^*) with rising intonation. I further argue that the application

of the projection can be expanded to other discourse components as well, especially the projected Table (*Table**), which will be defined in Section 5.1.

5 Interpreting rising declaratives

This section focuses on systematizing the specific contextual conditions that determine the projection of a discourse component, leading to a particular interpretation. I then present discourse effects for each paradigm of RDs.

5.1 Assertive rising declaratives

5.1.1 Contextual interpretation

For ARDs, contextual information about their relevance to the current QUD determines their specific paradigm. This relevance can be assessed by comparing the semantic content of the current QUD with that of the ARD. An ARD that conveys a proposition that is a subset of the current QUD is construed as an Epistemic Uncertainty ARD, whereas an ARD that conveys a proposition that is not a subset of the current QUD is understood as a Metalinguistic Uncertainty ARD. To illustrate, compare two ARDs in (3), repeated in (14).

- (14) a. Epistemic Uncertainty ARD
 A: Where's Sally?
 B: (Um...) *She's home?*
- b. Metalinguistic Uncertainty ARD
 A: Does he speak Chinese?
 B: *He speaks Cantonese?*

In (14a), the content of an ARD is $\{Sally\ is\ home\}$. This proposition is a subset of the current QUD, $\{Sally\ is\ home, Sally\ is\ at\ school, Sally\ is\ at\ the\ caf\acute{e}, \dots\}$, which is updated to the topmost stack of the *Table* (i.e., $p \in P$). In contrast, in (14b), $\{He\ speaks\ Cantonese\}$ is not a subset of $\{He\ speaks\ Chinese, He\ doesn't\ speak\ Chinese\}$ (i.e., $p \notin P$). The result correctly categorizes (14a) as an Epistemic Uncertainty ARD and (14b) as a Metalinguistic Uncertainty ARD.

5.1.2 Discourse effects

Based on the contextual cues discussed above, rising intonation of ARDs projects discourse commitments, accordingly. Epistemic Uncertainty ARDs are analyzed as updating p to the DC_{sp}^* , since the speaker's uncertainty is concerned with the

truth value of the expressed proposition.¹³ Alternatively, to incorporate Metalinguistic Uncertainty ARDs into the Table model, I introduce a modified version of the ‘projected’ *Table* (henceforth, *Table*^{*}; Malamud & Stephenson 2012, Bhadra 2020), which represents a tentative proposal of raising an issue.¹⁴ The *Table*^{*} is defined analogous to the DC_X^* and the CG^* , since they all reflect the expected next stage of conversation. The CG^* is a set of potential future CG s relative to the at-issue content on the *Table*. Likewise, the DC_X^* is a tentative commitment of the speaker (the DC_{sp}^*) or the speaker’s expectation or guess to the commitment of other participants in the discourse (the DC_{ad}^*) and thus the DC_X^* also represents the expected next stage of conversation. In the same way, the propositional content added in the *Table*^{*} represents the speaker’s expectation on the issue to be relevant to the current QUD. Therefore, updating semantic content to the *Table*^{*} reflects the speaker’s uncertainty on the relevance to the current QUD (Roberts 1996, 2012) and their expectation of the information becoming relevant to it.

To recapitulate, the discourse effects of ARDs are presented in (15) where a subscripted *i* stands for ‘input’ and a subscripted *o* stands for ‘output’.

- (15) a. Discourse effect of Epistemic Uncertainty ARDs
 (i) $Table_o = Table_i \cup \{p\}$
 (ii) $DC_{sp,o}^* = DC_{sp,i}^* \cup p$
 b. Discourse effect of Metalinguistic Uncertainty ARDs
 (i) $Table_o^* = Table_i^* \cup \{p\}$
 (ii) $DC_{sp,o} = DC_{sp,i} \cup p$

The proposed account also provides an explanation for the politeness effect observed in both types of ARDs within a unified discourse process (cf., e.g.,

¹³To some extent, my account is similar to Malamud & Stephenson (2015) and differs from Jeong (2018) by updating p to the DC_{sp}^* instead of the DC_{sp} , but differs from both in that I do not utilize MLP .

¹⁴Bhadra (2020) defines the *Table*^{*} as an ordered stack which contains tentative issues (i.e., proposals to be added to the Table for future resolution). I follow her account with the formulation of the *Table*^{*} as a stack, but additionally provide a more restrained definition for the tentative issue: the issue which the speaker expects to be relevant to the current QUD. A further difference between her approach and mine comes from the CG^* . She claims that the tentative issue updated to the *Table*^{*} does not update the CG^* , but I argue that the issue on the *Table*^{*} also affects the CG^* , remaining consistent with Malamud & Stephenson (2012). Moreover, in treating the CG^* projected by questions, my approach aligns with the framework proposed by Farkas & Bruce (2010) and Malamud & Stephenson (2015) with a non-singleton set. In contrast, Bhadra (2020) deviates from these and adopts a singleton-set approach to polar interrogatives, which traces its roots back to Bolinger (1978) and proposes salient alternatives (SalientAlts), provided by the context, to capture the interrogative force of polar interrogatives.

Jeong 2021). This process involves moving an item from projected components to present ones. Projected components require the addressee's ratification for the progression of discourse, enhancing the addressee's face by being indirect, which contributes to politeness. Since both types of ARDs update projected components, either DC_{sp}^* or $Table^*$, they can both be employed as politeness strategies.

I now move on to the visual representation of updates within the conversational scoreboard model. Consider (16) with the proposed analysis in Table 1.¹⁵ At t_3 , speaker A ratifies the proposition p which speaker B is uncertain about. Then, p is automatically moved to DC_B (step 1), allowing the issue to be resolved in a way that expands the CG (step 2).¹⁶

- (16) [Context: A and B are sorting paint cans in a store into a 'red' bin and an 'orange' bin. A points to orangish-red paint.]
 A: What color would you say this is? t_1
 B: *It's red?* t_2
 A: Yeah, I think so too. t_3

Table 1: Formal analysis of (16) with an Epistemic Uncertainty ARD

	A utters q ? in t_1	B utters p ? in t_2	A utters <i>Yeah</i> in t_3	after t_3	
				step 1	step 2
<i>Table</i>	$\langle\{q, \neg q\}\rangle$	$\langle\{p\}\rangle$	$\langle\{p\}\rangle$	$\langle\{p\}\rangle$	
<i>Table</i> *					
DC_A			$\{p\}$	$\{p\}$	
DC_A^*					
DC_B				$\{p\}$	
DC_B^*		$\{\{p\}\}$	$\{\{p\}\}$	\uparrow $((\{p\}))$	
CG	s_1	s_1	s_1	s_1	$s_2 =$ $\{s_1 \cup \{p\}\}$
CG*	$\{s_1 \cup \{q\}, s_1$ $\cup \{\neg q\}\}$	$\{s_1 \cup \{p\}\}$	$\{s_1 \cup \{p\}\}$	$\{s_1 \cup \{p\}\}$	

¹⁵Following Jeong (2018), I assume $\{q, \neg q\}$ at t_1 is retracted and replaced by $\{p\}$ at t_2 . This can be done as speaker B takes p as a partial answer. This retraction process is accepted only when the speaker has assurance on the fact that p is relevant to the issue on the *Table*.

¹⁶These two steps take place simultaneously, but are visually separated only for the ease of explanation.

Metalinguistic Uncertainty ARDs can also be analyzed as automatic movement of $\{p\}$ from the *Table** to the *Table* with the addressee's ratification. Consider (17) with the proposed analysis in Table 2. With the falling *Oh* at t_3 , speaker A confirms speaker B's expectation to update the *Table*. After the automatic move process to the *Table*, the rest of the convention is identical to that of falling declaratives.

- (17) A: Does he speak Spanish? t_1
 B: *He speaks Ladino*? t_2
 A: Oh, I see. t_3

Table 2: Formal analysis of (17) with a Metalinguistic Uncertainty ARD

	A utters p ? in t_1	B utters p ? in t_2	A utters <i>Oh</i> in t_3	after t_3	
				step 1	step 2
<i>Table</i>	$\langle\{p, \neg p\}\rangle$			$\uparrow\langle\{p\}\rangle$	
<i>Table*</i>		$\langle\{p\}\rangle$	$\langle\{p\}\rangle$	$\uparrow(\langle\{p\}\rangle)$	
DC_A			$\{p\}$	$\{p\}$	
DC_A^*					
DC_B		$\{p\}$	$\{p\}$	$\{p\}$	
DC_B^*					
CG	s_1	s_1	s_1	s_1	$s_2 = \{s_1 \cup \{p\}\}$
CG*	$\{s_1 \cup \{p\}, s_1 \cup \{\neg p\}\}$	$\{s_1 \cup \{p\}\}$	$\{s_1 \cup \{p\}\}$	$\{s_1 \cup \{p\}\}$	

5.2 Inquisitive rising declaratives

5.2.1 Contextual interpretation

Analogous to ARDs, the specific use of IRDs is also communicated throughout the close interaction with discourse context. Contradictory IRDs are attested when the context indicates that the addressee believes (or is at least biased toward) p . Consider the examples below:

- (18) a. Confirmative IRD
 [Context: Same as (7a).]
 A: There's one flight to Seoul.
 B: *The flight leaves at 10am?*

b. Contradictory IRD

A: Dave is a good singer.

B: *Dave is a good singer?*

(18a) is biased toward the expressed proposition p , whereas (18b) is biased toward its negation $\neg p$. In both contexts, the speaker assumes that the addressee would be committed to p , but they differ in contextual cues. In (18a), the context does not directly indicate whether the addressee (speaker A) has a commitment on p . In other words, there is no explicit evidence in the context to support the addressee's belief that the flight leaves at 10am. On the contrary, the addressee's belief on p is evident to the speaker in (18b) from the explicit expression. It is shown that the contradictory use of IRDs is not permitted unless it is supported by the appropriate contextual information. This aligns with the arguments put forth in previous studies (Gunlogson 2003, Farkas & Roelofsen 2017) and experimental results (Jeong 2018) regarding the necessary contextual condition for contradictory IRDs: Contradictory IRDs are attested when the context indicates that the addressee believes p .

With this account, the cognitive process of deriving negative bias becomes apparent. Similar to Jeong (2018), the negative bias arises from the pragmatic reasoning which suggests that the speaker has a reason to seek further explanation or justification from the addressee. The expression of negative bias occurs when the speaker, in a context where the addressee's commitment on p is evident, makes a best guess on the addressee's commitment (in accordance with the definition of the DC_{ad}^*). This intentional opening up of the issue regarding $\{p, \neg p\}$ in order to double-check the addressee's commitment on p is unnecessary in typical context. However, as the speaker deliberately brings up the issue of the interlocutor's assumed commitment, this leads to the pragmatic reasoning of urging for an additional explanation on the addressee's commitment, due to the speaker's negative bias.

5.2.2 Discourse effects

I propose that Confirmative IRDs exhibit a positive bias by adding p to the DC_{sp}^* , indicating the speaker's 'weaker' commitment. In contrast, Contradictory IRDs convey a negative bias by lacking speaker's commitment and instead adding it to the DC_{ad}^* . This effect stems from the following pragmatic reasoning: In a context in which Contradictory IRDs are possible, it is assumed that the addressee has either asserted or presupposed the proposition p . The fundamental assumption for cooperative discourse is to enhance mutual information, and thus expanding

the common ground among participants is the most plausible act. However, the fact that the speaker refrains from adding p to their own commitment sets, and instead updates it to the DC_{ad}^* may present two potential interpretations regarding bias: either ignorant or negative. Given that an ignorant speaker might have chosen polar interrogatives instead (Goodhue 2022), the decision to update the DC_{ad}^* signals a negative bias.

Regarding Mirative IRDs, I follow Rett's (2021) concept of illocutionary not-at-issue content. Rett distinguishes illocutionary not-at-issue content (e.g., mirative markers) from descriptive not-at-issue content. A key divergence lies in phenomena related to denial: while denying descriptive not-at-issue content leads to contradiction, denying illocutionary not-at-issue content results in Moore's Paradox. Similarly, the direct negation of Mirative IRDs doesn't yield contradiction but rather invokes Moore's Paradox. Consider the example in (19): the last sentence which follows a Mirative IRD is infelicitous, but it is not a contradiction.

- (19) [Context: A and B are watching a girl give a very professional performance in a school debate. From this, A is thinking that she might be 12 or 13 years old.]
 A: She's amazing.
 B: I know, and she's only 9 years old.
 A: (What?) *She's nine?* # I KNEW that she is nine.

From this evidence, I model Mirative IRDs as illocutionary not-at-issue content which updates flavored commitment to the DC_{sp} (Rett 2021), as defined in (20). Flavored discourse commitment reflects the speaker's attitude other than belief, including mirativity.¹⁷

- (20) Discourse Commitments (Rett 2021: 326)
 Let DC_a be sets of propositions of the form *is-surprised_a(p)*, representing the public commitments with respect to a discourse in which a and b are the participants, where *is-surprised_a(p)* is a public commitment of a iff ' a is surprised with p ' is a mutual belief of a and b .

To summarize, the discourse effects of IRDs are proposed in (21): in (21a) for Confirmative IRDs, in (21b) for Contradictory IRDs, and in (21c) for Mirative IRDs. Note that (21c) is identical to (21b), except for the update of DC_{sp} with *is-surprised_a(p)*. In this respect, Mirative IRDs are analyzed as additionally implicating not-at-issue content, i.e., mirativity, on top of Contradictory IRDs.

¹⁷Other sets of propositions of the form *believes_a(p)*, *is-pleased_a(p)*, or *is-not-surprised_a(p)* are also proposed by Rett (2021).

- (21) a. Discourse effect of Confirmative IRDs
 i. $Table_o = Table_i \cup \{p, \neg p\}$
 ii. $DC_{sp,o}^* = DC_{sp,i}^* \cup p$
 b. Discourse effect of Contradictory IRDs
 i. $Table_o = Table_i \cup \{p, \neg p\}$
 ii. $DC_{ad,o}^* = DC_{ad,i}^* \cup p$
 c. Discourse effect of Mirative IRDs
 i. $Table_o = Table_i \cup \{p, \neg p\}$
 ii. $DC_{ad,o}^* = DC_{ad,i}^* \cup p$
 iii. $DC_{sp,o} = DC_{sp,i} \cup \text{is-surprised}_a(p)$

The procedure for resolving the issue with Confirmative IRDs as in (22) is schematized in Table 3. The resolution of the issue is rendered by the automatic movement of p from DC_B^* to DC_B as presented in step 1. In step 2, speakers have a joint commitment to p . Thus, the issue is resolved from the *Table* and expands the *CG*.

- (22) [Context: B is buying a ticket for a flight to Seoul at the airport.]
 A: There's one flight to Seoul. t_1
 B: *The flight leaves at 10am?* t_2
 A: Yes, from Gate 5. t_3

The issue of Contradictory IRDs is more difficult to resolve. Due to the empty DC_{sp} and DC_{sp}^* , the discourse remains in a conversational crisis even after the addressee's ratification. An illustration of the analysis proposed for a Contradictory IRD such as in (23) is given in Table 4.

- (23) A: (student) The answer to this problem is 5 because the square root of 9 is 2 and 2+3 is 5. t_1
 B: (teacher) *The square root of 9 is 2?* t_2
 A: Yes. t_3

In (23), speaker B does not update any own commitment with the Contradictory IRD at t_2 . Due to the lack of commitment from one participant, the issue cannot be resolved even after the other participant utters *Yes* at t_3 . The consequence will lead participants to the next stage of the discourse, pursuing to 'agree to disagree' (Farkas & Bruce 2010) or putting the issue at the bottom of the *Table*

Table 3: Formal analysis of (22) with a Confirmative IRD

	A utters q in t_1	B utters $p?$ in t_2	A utters Yes in t_3	after t_3	
				step 1	step 2
<i>Table</i>	$\langle\{q\}\rangle$	$\langle\{p, \neg p\}\rangle$	$\langle\{p\}\rangle$	$\langle\{p\}\rangle$	
<i>Table*</i>					
DC_A	$\{q\}$	$\{q\}$	$\{p\}$	$\{p\}$	
DC_A^*					
DC_B		$\{q\}$		$\{p\}$	
DC_B^*		$\{\{p\}\}$	$\{\{p\}\}$	\uparrow $((\{p\}))$	
<i>CG</i>	s_1	$s_2 =$ $\{s_1 \cup \{q\}\}$	s_2	s_2	$s_3 =$ $\{s_2 \cup \{p\}\}$
<i>CG*</i>	$\{s_1 \cup \{q\}\}$	$\{s_2 \cup \{p\}, s_2$ $\cup \{\neg p\}\}$	$\{s_2 \cup \{p\}\}$	$\{s_2 \cup \{p\}\}$	

Table 4: Formal analysis of (23) with a Contradictory IRD

	A utters p in t_1	B utters $p?$ in t_2	A utters Yes in t_3
<i>Table</i>	$\langle\{p\}\rangle$	$\langle\{p, \neg p\}\rangle$	$\langle\{p\}\rangle$
<i>Table*</i>			
DC_A	$\{p\}$	$\{p\}$	$\{p\}$
DC_A^*		$\{\{p\}\}$	
DC_B			
DC_B^*			
<i>CG</i>	s_1	s_1	s_1
<i>CG*</i>	$\{s_1 \cup \{p\}\}$	$\{s_1 \cup \{p\}, s_1 \cup \{\neg p\}\}$	$\{s_1 \cup \{p\}\}$

to not be discussed unless one of the speakers changes their own commitments. Whatever treatment we may assume, it prevents the issue from expanding the CG.

6 Conclusion

This paper presented a diverse paradigm of RDs, focusing on their speech acts and how their meanings are acquired throughout the discourse. Given that RDs serve both informative and inquisitive functions, they exhibit a multi-functional behaviour. From this observation, I proposed an analysis that delineates the role of semantics and pragmatics by explaining their interface in generating the discourse effects observed in different types of RDs. Most importantly, rising intonation affects both semantic content and discourse components. Depending on its steepness, rising intonation modifies the semantic content of the clause. Then, through the interaction with the context, it subsequently projects discourse components. By establishing this framework, the proposed analysis provides a predictable model for semantic and pragmatic properties of RDs.

Acknowledgements

This work is based on my Seoul National University thesis (Hong 2023) supervised by Jungmee Lee, to whom I am extremely grateful for her wonderful support at various stages of this project. I also thank Sunwoo Jeong and Yong-Yae Park for their insightful comments. Preliminary versions of this paper were presented at CSSP 2023 and LSA 2024. I thank the respective audiences for very useful feedback and discussion. Thanks finally to the editors and reviewers of this volume. All remaining errors are on my own.

References

- Beyssade, Claire & Jean-Marie Marandin. 2006. The speech act assignment problem revisited: Disentangling speaker's commitment from speaker's call on addressee. In Oliver Bonami & Patricia Cabredo Hofherr (eds.), *Empirical Issues in Syntax and Semantics*, vol. 6, 37–68.
- Bhadra, Diti. 2020. The semantics of evidentials in questions. *Journal of Semantics* 37(3). 367–423. DOI: 10.1093/jos/ffaa003.
- Bolinger, Dwight. 1978. Yes-no questions are not alternative questions. In Henry Hiz (ed.), *Questions*, 87–105. Springer.

- Ciardelli, Ivano, Jeroen Groenendijk & Floris Roelofsen. 2013. Inquisitive semantics: A new notion of meaning. *Language and Linguistics Compass* 7(9). 459–476. DOI: 10.1111/lnc3.12037.
- Ciardelli, Ivano, Jeroen Groenendijk & Floris Roelofsen. 2018. *Inquisitive semantics*. Oxford University Press. DOI: 10.1093/oso/9780198814788.001.0001.
- Condoravdi, Cleo & Sven Lauer. 2012. Imperatives: Meaning and illocutionary force. In Christopher Piñón (ed.), *Empirical issues in syntax and semantics*, vol. 9, 37–58.
- Farkas, Donka F. & Kim B. Bruce. 2010. On reacting to assertions and polar questions. *Journal of Semantics* 27(1). 81–118. DOI: 10.1093/jos/ffp010.
- Farkas, Donka F. & Floris Roelofsen. 2017. Division of labor in the interpretation of declaratives and interrogatives. *Journal of Semantics* 34(2). 237–289. DOI: 10.1093/jos/ffw012.
- Frana, Ilaria & Kyle Rawlins. 2019. Attitudes in discourse: Italian polar questions and the particle *mica*. *Semantics & Pragmatics* 12(16). 1–55. DOI: 10.3765/sp.12.16.
- Ginzburg, Jonathan. 1996. Dynamics and the semantics of dialogue. In Jerry Seligman & Dag Westerståhl (eds.), *Logic, language and computation*, vol. 1 (CSLI Lecture Notes 58), 221–237. CSLI Publications.
- Goodhue, Daniel. 2021. A unified account of inquisitive and assertive rising declaratives. In Patrick Farrell (ed.), *Proceedings of the Linguistic Society of America*, vol. 6, 951–965. DOI: 10.3765/plsa.v6i1.5042.
- Goodhue, Daniel. 2022. Isn't there more than one way to bias a polar question? *Natural Language Semantics* 30(4). 379–413. DOI: 10.1007/s11050-022-09198-2.
- Gunlogson, Christine. 2003. *True to form: Rising and falling declaratives as questions in English*. Routledge. DOI: <https://doi.org/10.4324/9780203502013>.
- Gunlogson, Christine. 2008. A question of commitment. *Belgian Journal of Linguistics* 22(1). 101–136. DOI: 10.1075/bjl.22.06gun.
- Hamblin, Charles L. 1971. Mathematical models of dialogue. *Theoria* 37(2). 130–155. DOI: 10.1111/j.1755-2567.1971.tb00065.x.
- Hong, Junseon. 2023. *The semantics and pragmatics of English rising declaratives*. Seoul National University. (Master's thesis).
- Jeong, Sunwoo. 2018. Intonation and sentence type conventions: Two types of rising declaratives. *Journal of Semantics* 35(2). 305–356. DOI: 10.1093/semant/ffy001.
- Jeong, Sunwoo. 2021. Deriving politeness from an extended Lewisian model: The case of rising declaratives. *Journal of Pragmatics* 177. 183–207. DOI: 10.1016/j.pragma.2021.02.017.

- Karttunen, Lauri. 1977. Syntax and semantics of questions. *Linguistics and Philosophy* 1(1). 3–44. DOI: 10.1007/BF00351935.
- Krifka, Manfred. 2015. Bias in commitment space semantics: Declarative questions, negated questions, and question tags. In Sarah D'Antonio, Mary Moroney & Carol Rose Little (eds.), *Proceedings of SALT*, vol. 25, 328–345. DOI: 10.3765/salt.v25i0.3078.
- Levon, Erez. 2016. Gender, interaction and intonational variation: The discourse functions of High Rising Terminals in London. *Journal of Sociolinguistics* 20(2). 133–163. DOI: 10.1111/josl.12182.
- Lewis, David. 1979. Scorekeeping in a language game. *Journal of Philosophical Logic* 8(1). 339–359. DOI: 10.1007/BF00258436.
- Malamud, Sophia A. & Tamina Stephenson. 2012. Three ways to avoid commitments: The pragmatics of declarative force modifiers. In Ana Aguilar Guevara, Anna Chernilovskaya & Rick Nouwen (eds.), *Proceedings of Sinn und Bedeutung*, vol. 16, 403–416.
- Malamud, Sophia A. & Tamina Stephenson. 2015. Three ways to avoid commitments: Declarative force modifiers in the conversational scoreboard. *Journal of Semantics* 32(2). 275–311. DOI: 10.1093/jos/ffu002.
- Podesva, Robert J. 2011. Salience and the social meaning of declarative contours: Three case studies of gay professionals. *Journal of English Linguistics* 39(3). 233–264. DOI: 10.1177/0075424211405161.
- Rett, Jessica. 2021. The semantics of emotive markers and other illocutionary content. *Journal of Semantics* 38(2). 305–340. DOI: 10.1093/jos/ffab005.
- Roberts, Craige. 1987. *Modal subordination, anaphora and distributivity*. University of Massachusetts Amherst. (Doctoral dissertation).
- Roberts, Craige. 1989. Modal subordination and pronominal anaphora in discourse. *Linguistics and Philosophy* 12(6). 683–721. DOI: 10.1007/BF00632602.
- Roberts, Craige. 1996. Information structure in discourse: Toward a unified theory of formal pragmatics. *Ohio State University Working Papers in Linguistics* 49. 91–136.
- Roberts, Craige. 2012. Information structure: Towards an integrated formal theory of pragmatics. *Semantics and Pragmatics* 5(6). 1–69. DOI: 10.3765/sp.5.6.
- Roberts, Craige. 2018. Speech acts in discourse context. In Daniel Fogal, Daniel W. Harris & Matt Moss (eds.), *New work on speech acts*, 317–359. Oxford University Press.
- Roelofsen, Floris & Donka F. Farkas. 2015. Polarity particle responses as a window onto the interpretation of questions and assertions. *Language* 91(2). 359–414. DOI: 10.1353/lan.2015.0017.

- Romero, Maribel & Chung-Hye Han. 2004. On negative yes/no questions. *Linguistics and Philosophy* 27(5). 609–658. DOI: 10.1023/B:LING.0000033850.15705.94.
- Rudin, Deniz. 2018a. *Rising above commitment*. UC Santa Cruz. (Doctoral dissertation).
- Rudin, Deniz. 2018b. Rising imperatives. In Sireemas Maspong, Brynhildur Stefánsdóttir, Katherine Blake & Forrest Davis (eds.), *Proceedings of SALT*, vol. 28, 100–119.
- Rudin, Deniz. 2022. Intonational commitments. *Journal of Semantics* 39(2). 339–383. DOI: 10.1093/jos/ffac002.
- Stalnaker, Robert C. 1978. Assertion. In *Pragmatics*, 315–332. Brill. DOI: 10.1163/9789004368873_013.
- Sudo, Yasutada. 2013. Biased polar questions in English and Japanese. In Daniel Gutzmann & Hans-Martin Gärtner (eds.), *Beyond expressives: Explorations in use-conditional meaning*, 275–295. Brill.
- Westera, Matthijs. 2017. *Exhaustivity and intonation: A unified theory*. University of Amsterdam. (Doctoral dissertation).
- Westera, Matthijs. 2018. Rising declaratives of the quality-suspending kind. *Glossa: A journal of General Linguistics* 3:121. 1–32. DOI: 10.5334/gjgl.415.