

Two Types of Inquisitive Rising Declaratives

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Hong, Junseon. 2023. *Two Types of Inquisitive Rising Declaratives*. *SNU Working Papers in English Language and Linguistics* 19, 19-32. This paper explores various discourse effects of Inquisitive Rising Declaratives (IRDs). IRDs are biased questions which have positive or negative bias depending on the context. They have two main types, Confirmative and Contradictory. Confirmative IRDs implicate the speaker's positive bias toward the prejacent proposition, while Contradictory IRDs implicate the negative bias toward it. In this paper, I propose novel update conventions for two main types in terms of their bias. Confirmative IRDs update the speaker's projected commitment set, whereas Contradictory IRDs update the addressee's projected commitment set. (Seoul National University)

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1. Introduction

Rising declaratives (henceforth RDs) in English highlight the complex pattern of the semantic-pragmatic interface. They have the same syntactic form with falling declaratives and similar intonation with rising polar interrogatives. As a result, their discourse effects overlap with both falling declaratives and rising polar interrogatives. Jeong (2018) classifies the first type of RDs that overlaps with falling declaratives as Assertive Rising Declaratives (henceforth ARDs) and the other type that overlaps with rising polar interrogatives as Inquisitive Rising Declaratives (henceforth IRDs).

This paper focuses on IRDs and proposes novel models for their two types. Apart from prior accounts, I propose that IRDs should have two distinct conventions in terms of their discourse effects. The examples of two types are illustrated in (1) and (2).

(1) CONFIRMATIVE IRD

[Context: The speaker and her addressee made plans two days ago to get drinks tonight. They haven't spoken about it since then. She says to him:]

A: *We're still on for tonight?*

(Rudin, 2022, p.346)

(2) CONTRADICTORY IRD

[Context: The teacher is quizzing a student:]

A: (student) The answer to this problem is 5 because the square root of 9 is 2 and 2 + 3 is 5.

B: (teacher) *The square root of 9 is 2?*

(Farkas & Reolofsen, 2017, p.269)

IRDs in (1) and (2) implicate the speaker's bias toward the prejacent proposition p and its negation $\neg p$. I will refer to them as Confirmative IRDs and Contradictory IRDs, respectively.

The outline of the remainder of this article is as follows: In §2, I introduce the phenomena of RDs, especially focusing on IRDs. §3 summarizes previous approaches. §4 explores the subtypes of IRDs and gives some empirical data where previous analysis does not hold. Then, the discourse effects of two IRDs are presented in §5. Lastly, §6 contains a concluding discussion.

2. Phenomena

Generally, ARDs are assumed as *tentative* assertions whereas IRDs are assumed as *biased* questions. The *Oh vs. Yes* diagnostic (Gunlogson 2008) can be used for the determination between the two.¹ *Oh* signals that the speaker is committing to the addressee's commitments, while *Yes* signals that the commitment is independent of other adjacent commitments. As ARDs are similar to assertions, the speaker of ARDs has her own commitments. Thus, *Oh* can be followed, whereas *Yes* is infelicitous as shown below:

(3) ASSERTIVE RISING DECLARATIVE (ARD)

A: Do you know if John has a close female relative?

1. Jeong (2018) expands this diagnostic to be used for RDs while the original use in Gunlogson (2008) is limited only to falling declaratives.

B: (Um...) *John has a sister?*

A: *Oh*, I didn't know that. / c.f. A: #**Yes**, he does.

(Jeong, 2018, p. 310)

From speaker A's follow-up response *Oh*, it can be inferred that speaker B's commitment in (3) is somehow definitive.

Contrastively, the reversed consequences are shown for the follow-up response for IRDs, as illustrated in (4).

(4) INQUISITIVE RISING DECLARATIVE (IRD)

A: John went to the airport to pick up his sister.

B: (What?) *John has a sister?*

A: **Yes**, he does. Didn't you know? / c.f. A: #**Oh**, I see.

(Jeong, 2018, p. 309-310)

Speaker A's *Yes* in (4) implies that B is not committed to the proposition '*John has a sister*', or only defectively.

IRDs are further divided in terms of their bias, whether positive or negative depending on the context.²

(5) **IRD with positive bias**

A: John has to leave early.

B: *He'll miss the party then?*

2. I suppose ARDs can be also divided into two subtypes, whether the speaker's tentativeness is on the truth value of the prejacent proposition. To illustrate, see (i) and (ii).

(i) [Context: **A** is quizzing **B** on state capitals. The student isn't sure of the answer but thinks it might be Albany.]

A: (a teacher) Where's the capital of New York?

B: (a student) *It's Albany?*

(Malamud & Stephenson, 2015, p. 282)

(ii) [Context: In a Chicago radio station, the radio station DJ **A** is on the phone with a caller **B**.]

A: (Radio Station DJ) Good morning Susan. Where are you calling from?

B: (Caller) *I'm calling from Skokie?*

(Hirschberg & Ward, 1995, p. 408)

While the speaker of an ARD in (i) is tentative about the truth of the prejacent proposition, the speaker in (ii) does not. I assume that (i) and (ii) have different conventions, but I will not pursue this issue any further as my focus of this paper is on IRDs.

(Gunlogson, 2003, p. 60)

Speaker B in (5) is making a guess on the belief of the addressee. That is, she thinks that it is highly probable that John will miss the party.

IRDs can also convey negative bias as illustrated in (6).

(6) **IRD with negative bias**

[Context: Mother asks her child to set the table and he does a particularly bad job of it but appears to consider the chore finished.]

A: *This table is set?* Where are the wine glasses? Where are the napkins?

(Farkas & Roelofsen, 2017, p. 276)

Speaker A in (6) does not believe the proposition ‘*the table is set*’. She is rather conveying her suspicion on it.

3. Previous Approaches

In this section, I will briefly review previous approaches. §2.1 summarizes basic components that are adopted for my purposes and §2.2 introduces the core idea from previous accounts.

3.1. Basic Components of the Context

The model of the conversational scoreboard (Lewis, 1979) has been widely adopted as the model for discourse (e.g., Farkas & Bruce, 2010; Malamud & Stephenson, 2015; Farkas & Roelofsen, 2017; Jeong, 2018; among others). My proposed system also adopts the basic components proposed by Farkas & Bruce (2010) and Malamud & Stephenson (2015), summarized as follows:

(7) **Contextual Components**

- a. **Common Ground (CG)**: the set of propositions that all speakers are publicly committed to (Stalnaker, 1978)
- b. **Table (T)**: the stack that records the at-issue content in the conversation (Farkas & Bruce, 2010)
- c. **Participant’s 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 (Farks & Bruce, 2010)

- d. **Projected Discourse commitment** (DC_X^*): the set of propositions that the interlocutor X is expected to become committed to or the best guess of commitments made by other interlocutors (Malamud & Stephenson, 2015)
- e. **Projected Common Ground** (CG^*): the set of potential CGs 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)

The *CG* is a set of commitments shared by every discourse participant. The *Table* is a stack that records at-issue items. The dynamic account of the speech act is adding the new issue to the *Table* and resolving them in a way that expands the *CG*. During the conversational move, each interlocutor has individual commitments, DC_X , which are not commonly committed. Those commitment sets are the sole belief of each participant which might be added to the *CG*. For the anticipatory discourse moves, CG^* , the expected future *CG*, is needed. For instance, when $\{p, \neg p\}$ is added to the *Table*, the participants of the conversation can predict future *CG* as $\{s_1 \cup p\}$ or $\{s_1 \cup \neg p\}$ where s_1 is the prior *CG* before p . Likewise, DC_X^* is analogous to the CG^* . Malamud and Stephenson (2015) posit DC_X^* to allow the moves for tentative commitments of the speaker (Speaker's Projected Commitment; henceforth DC_{sp}^*) or the speaker's best guess on commitments of other participants (Addressee's Projected Commitment; henceforth DC_{ad}^*).

3.2. Table Models

In this subsection, I summarize a few representative models based on the conversational scoreboard (Lewis, 1979).

3.2.1. Malamud & Stephenson (2015)

Malamud & Stephenson (2015) introduce the way to avoid commitments in reverse-polarity tags, same-polarity tags, and non-interrogative rising intonation (NI-rise; i.e., RDs). They assume that the core effect of RDs is to add p in the DC_{sp}^* and add a metalinguistic issue (Ginzburg, 2012) concerning the utterance of p ($MLIP$) to the *Table*.

- (8) A utters p with an NI-rise:
 (Proposition q is already in the CG.)

	A utters p ?
Table	$\langle MLP, \{p\} \rangle$
DC_A	$\{\}$
DC_A^*	$\{\{p\}\}$
DC_B	$\{\}$
DC_B^*	$\{\{\}\}$
CG	s_1
CG^*	$\{\{s_1 \cup \{r_1\}, \{s_1 \cup \{r_2\}\}\}$

(Malamud & Stephenson, 2015, p.295)

As p is added to DC_{sp}^* , rather than DC_{sp} , the speaker can avoid fully committing to the proposition. Moreover, as MLP is first added to the table, the resolution for it must be prior to p . In CG^* , resolutions r_1 and r_2 are priorly projected than the resolution of the prejacent proposition p .³ Thus, p can be taken into consideration only after MLP is resolved. The MLP associated with p can have a range of clarification requests. Without prior context, it usually indicates the tentativeness of the speaker, which makes RDs tentative assertions.

However, their account is insufficient to capture the pattern of IRDs, especially with a negative bias. To illustrate, see (9).

- (9) [Context: Mother asks her child to set the table and he does a particularly bad job of it but appears to consider the chore finished.]
 A: *This table is set?* Where are the wine glasses? Where are the napkins?
 (Farkas & Roelofsen, 2017, p. 276)

In (9), speaker A does not believe that the table is set (p). Rather, she believes the opposite ($\neg p$). The notion of MLP is not explanatory enough for negative bias as it provides no explanation for reversing the epistemic bias.

3.2.2. Farkas & Roelofsen (2017)

Farkas & Roelofsen’s (2017) account is couched within the framework of

3. More than two possible resolutions for MLP are possible, but only two of them are assumed for simplicity.

inquisitive semantics (Ciardelli et al., 2013). RDs, which are marked, have the same semantic radical as polar interrogatives. However, what makes the former differ from the latter is that they signal the speaker's zero to low credulous level.

(10) **Conventional discourse effects of a rising declarative**

When a discourse participant x utters a rising declarative φ , expressing the proposition $\llbracket \varphi \rrbracket = \{\alpha, \bar{\alpha}\}^\downarrow$, the discourse context is affected as follows:

1. Basic effect

- The proposition expressed by φ , $\llbracket \varphi \rrbracket$ is added to the **table**.
- The informative content of φ , $\cup \llbracket \varphi \rrbracket$, is added to **commitments**(x).

2. Special effect

- $\langle \alpha, [\text{zero, low}] \rangle$ is added to **evidence**(x).

(Farkas & Roelofsen, 2017, p. 268)

Their model has an advantage in treating the cases where the RDs are used as interrogatives, by adding non-singleton set $\{p, \neg p\}$ to the *Table*.

However, their account is problematic with ARDs. While IRDs can have a positive bias (Confirmative IRDs) or a negative bias (Contradictory IRDs), ARDs can only have a positive bias. Also, as ARDs are used for tentative commitments (i.e., the lowered degree of commitments), the speaker would have strong evidence for the positive bias. For example, consider cases like (11).

(11) A: Do you speak Chinese?

B: *I speak Cantonese?*

Unlike their approach, the evidence of speaker B in (11) is not weak. Intuitively, the source of the information about the capability of own language skill is the speaker herself; thus, it is impossible for the speaker to have a low credence level.

3.2.3. Jeong (2018)

Jeong (2018) proposes two different types of RDs: ARDs and IRDs.⁴ To capture the distinct phenomena, two distinctive formal analyses for each RDs are proposed. Rising intonations RISE-A (assertive rises) and RISE-I (inquisitive rises) call for a marked interpretation of the morphosyntactically declarative

4. Phonetically, ARDs are correlated with high rising H*H-H% (weak rise), while IRDs are associated with low rising L*H-H% (steep rise). Note that * marks a pitch accent, - marks a phrase accent, and % marks a boundary tone.

utterance. Specifically, ARDs are marked because they are essentially assertive in their effects but are paired with rising intonation while IRDs are marked because they are essentially inquisitive but are paired with declarative syntax. Other elements like *CG*, *CG**, *DC_X*, and the *Table* are defined identically with prior works (e.g., Farkas & Bruce 2010; Malamud & Stephenson 2015). With these basic notions, the formal interpretation of ARDs is defined as follows:

- (12) **ARD** (content: p)
- a. Add p to a speaker's current commitment set, DC_{sp} .
 - b. Add p to the **Table**.
 - c. Add MLI^p to the **Table**. (c.f. falling declarative)

The discourse effect of ARDs is to first update p to DC_{sp} and the *Table*. Same as Malamud & Stephenson (2015), *MLI* is also updated to the *Table* which makes ARDs differ from falling declaratives. As *MLI* is at the top of the *Table*, MLI^p must be resolved prior to the proposition p .

Meanwhile, her proposed model for IRDs is as follows:

- (13) **IRD** (content: $\{p, \neg p\}$)
- a. Add $\{p, \neg p\}$ to the current **Table**.
 - b. Add p to the addressee's projected commitments set, DC_{Ad}^* (c.f., rising interrogative)

The content of IRDs has the same semantic content as polar interrogatives, $\{p, \neg p\}$ that are contributed from RISE-I. IRDs first update $\{p, \neg p\}$ to the *Table* and update the positive answer p to the DC_{ad}^* .

However, her binary classification does not hold in some cases, and I argue that a more complicated distinction is needed. In the next section, I will show the evidence to justify complicating the taxonomy, focusing on IRDs.

4. Contradictory IRDs and Confirmative IRDs

In this section, I provide empirical data that calls for an alternative approach to IRDs. The main idea is that two IRDs cannot be defined with identical discourse effects.

4.1. Jeong's (2018) Account on Two IRDs

The previous analysis of IRDs has identical update conventions regardless of the bias. The change of the context by Contradictory IRDs, proposed by Jeong (2018), is illustrated in (14).

(14) CONTRADICTIONARY IRD

- A: You should apologize to Sam. t_1
 B: *I was wrong and I should apologize?* t_2
 A: Yes, that's the right thing to do. t_3
 B: No way. You don't know the whole story. t_4

	A utters p in t_1	B utters p ? in t_2	A utters <i>Yes</i> in t_3	B utters <i>No way</i> in t_4
Table	$\langle\{p\}\rangle$	$\langle\{p, \neg p\}\rangle$	$\langle\{p\}\rangle$	$\langle\{\neg p\}\rangle$
DC_A	$\{p\}$	$\{p\}$	$\{p\}$	$\{p\}$
DC_A^*		$\{\{p\}\}$		
DC_B				$\{\neg p\}$
DC_B^*				
CG	s_1	s_1	s_1	s_1
CG^*	$\{s_1 \cup \{p\}\}$	$\{s_1 \cup \{p\}, s_1 \cup \{\neg p\}\}$	$\{s_1 \cup \{p\}\}$	$\{s_1 \cup \{\neg p\}\}$

(Jeong, 2018, p. 344-345)

Speaker B's bias toward $\neg p$ is argued to be expressed by the redundancy between DC_A and DC_A^* . While p is already in DC_A , p is also added to the DC_A^* in t_2 . This signals redundancy, which triggers the pragmatic reasoning that the speaker has a reason to elicit further explanation or justification from the addressee. This implies that the speaker believes $\neg p$.

Conversely, Confirmative IRDs show a different pattern.

(15) CONFIRMATIVE IRD

- A: There's one flight to Helsinki in the afternoon. t_1
 B: *The flight leaves at 4 pm?* t_2
 A: Yes, it does. At gate B. t_3
 B: Great. I'd like to book the flight. t_4

	A utters q in t_1	B utters $p?$ in t_2	A utters <i>Yes</i> t_3	B utters r in t_4
Table	$\langle \{q\} \rangle$	$\langle \{p, \neg p\} \rangle$	$\langle \{p\} \rangle$	$\langle \{r\} \rangle$
DC _A	$\{q\}$	$\{q\}$	$\{p, q\}$	$\{p, q\}$
DC _A [*]		$\{\{p\}\}$		
DC _B		$\{q\}$	$\{q\}$	$\{r, p, q\}$
DC _B [*]				
CG	s_1	$s_1 \cup \{q\} = s_2$	s_2	$s_2 \cup \{p\} = s_3$
CG [*]	$\{s_1 \cup \{q\}\}$	$\{s_2 \cup \{p\}, s_2 \cup \{\neg p\}\}$	$\{s_2 \cup \{p\}\}$	$\{s_3 \cup \{r\}\}$

(Jeong, 2018, p. 346-347)

In (15), speaker A has not publicly committed to p before t_2 , thus neither CG^{*} nor the *Table* contains p . This only signals that speaker B has some reason to believe that p is the likely answer of speaker A.

4.2. The ‘No way’ Test

The difference between Contradictory IRDs and Confirmative IRDs is whether the speaker can follow up with $\neg p$. For example, in speaker B’s response in (16), immediate denial *No way* can be followed, preventing p from entering the CG.

(16) CONTRADICTIONARY IRD

A: John has a sister. We should invite her too. t_1
 B: *John has a sister?* (t_2') *No way.* (t_2'') You must be thinking of his young brother. t_2

	A utters p in t_1	B utters $p?$ in t_2'	B utters <i>No way</i> in t_2''
Table	$\langle \{p\} \rangle$	$\langle \{p, \neg p\} \rangle$	$\langle \{\neg p\} \rangle$
DC _A	$\{p\}$	$\{p\}$	$\{p\}$
DC _A [*]		$\{\{p\}\}$	
DC _B			$\{\neg p\}$
DC _B [*]			
CG	s_1	s_1	s_1
CG [*]	$\{s_1 \cup \{p\}\}$	$\{s_1 \cup \{p\}, s_1 \cup \{\neg p\}\}$	$\{s_1 \cup \{\neg p\}\}$

As speaker B does not commit to p , even tentatively, her next conversational move can be committing to $\neg p$.

In contrast, Confirmative IRDs cannot be immediately denied. For further discussion, see (17).

(17) CONFIRMATIVE IRD

A: You should talk to John. He has a few female members in the family.

B: (Aha!) *John has a sister?* (t_2') #*No way.* (t_2'')

(17) might be confusing as it has the same syntactic structure as (16). However, it would become clearer when accompanied by *Aha*. The main purpose of the speaker is to ask a question which is positively biased. When *John has a sister?* has confirmative reading, *No way* cannot be followed. (18) also shows an example of a Confirmative IRD infelicitously followed by *No way*.

(18) CONFIRMATIVE IRD

A: (airline agent) There's one flight to Helsinki. t_1

B: (customer) *The flight leaves at 4 pm?* (t_2') #*No way.* (t_2'')

	A utters q in t_1	B utters $p?$ in t_2'	B utters <i>No way</i> t_2''
Table	$\langle\{q\}\rangle$	$\langle\{p, \neg p\}\rangle$	$\langle\{\neg p\}\rangle$
DC_A	$\{q\}$	$\{q\}$	$\{q\}$
DC_A^*		$\{\{p\}\}$	$\{\{p\}\}$
DC_B		$\{q\}$	$\#\{\neg p, q\}$
DC_B^*			
CG	s_1	$s_1 \cup \{q\} = s_2$	s_2
CG^*	$\{s_1 \cup \{q\}\}$	$\{s_2 \cup \{p\}, s_2 \cup \{\neg p\}\}$	$\{s_2 \cup \{\neg p\}\}$

As the purpose of the discourse move is to expand the CG, DC_X and DC_X^* has to be consistent, i.e., $\cap DC_X \neq \emptyset$, $\cap DC_X^* \neq \emptyset$, and $\{\cap DC_X\} \cap \{\cap DC_X^*\} \neq \emptyset$. In other words, a rational speaker would not commit p and $\neg p$ simultaneously. As Confirmative IRDs are biased toward p , an immediate expression of negative belief, *No way*, from the same speaker is not possible. However, the previous framework by Jeong (2018) cannot exclude the situation where $\neg p$ is positioned immediately after the Confirmative IRD. Since p is only added to the addressee's projected commitments, there is no way to prevent $\neg p$ from being

added to the speaker’s commitments. Therefore, the discourse effects of two IRDs should be differently modeled, according to their biases.

5. Formal Analysis

As shown in the previous section, Confirmative IRDs should be analyzed differently from Contradictory IRDs. I propose that Confirmative IRDs update p to the DC_{sp}^* , rather than DC_{ad}^* . Meanwhile, Contradictory IRDs remain identical as in Jeong(2018), updating p to DC_{ad}^* . My proposed conventions for two IRDs are summarized below:

(19) **Discourse Effect of CONFIRMATIVE IRDs** (content: $\{p, \neg p\}$)

a. Add $\{p, \neg p\}$ to the current **Table**.

b. Add p to the speaker’s projected commitments set, DC_{sp}^*

(20) **Discourse Effect of CONTRADICTIONARY IRDs** (content: $\{p, \neg p\}$)

a. Add $\{p, \neg p\}$ to the current **Table**.

b. Add p to the addressee’s projected commitments set, DC_{Ad}^*

As confirmative IRDs add p to DC_{sp}^* , it may seem analogous to Malamud & Stephenson (2015). Far from their account, however, (19) adds $\{p, \neg p\}$ to the *Table* and does not add *MLIP*. The non-singleton set can correctly convey the inquisitive speech act. At the same time, the proposed account has more predictive power than relying on the pragmatic reasoning of *MLIP*. Additionally, infelicity of *No way* followed by Confirmative IRDs can also be predicted as follows:

(21) **CONFIRMATIVE IRD**

A: (flight agent) There’s one flight to Seoul. t_1

B: (customer) *The flight leaves at 10am?* (t_2) #*No way.* (t_2'')

	A utters q in t_1	B utters p ? in t_2'	#B utters <i>No way</i> t_2''
Table	$\langle \{q\} \rangle$	$\langle \{p, \neg p\} \rangle$	$\langle \{\neg p\} \rangle$
DC_A	$\{q\}$	$\{q\}$	
DC_A^*			
DC_B		$\{q\}$	$\#\{\neg p\}$
DC_B^*		$\{\{p\}\}$	$\{\{p\}\}$

	A utters q in t_1	B utters p ? in t_2'	#B utters <i>No way</i> t_2''
CG	s_1	$s_1 \cup \{q\} = s_2$	s_2
CG*	$\{s_1 \cup \{q\}\}$	$\{s_2 \cup \{p\}, s_2 \cup \{\neg p\}\}$	$\{s_2 \cup \{\neg p\}\}$

In t_2' , the B has already added p in DC_B^* . Without any further contextual evidence, it is impossible to have $\neg p$ in DC_X when p is in DC_X^* because it is a contradiction against the bias toward p . Consequently, p in DC_B^* blocks B from adding $\neg p$ to DC_B , as long as speaker B is a rational discourse participant.

6. Conclusion

This paper explores the different discourse effects of two IRDs. Building on the taxonomy proposed by Jeong (2018), I propose a new formal account for Confirmative IRDs. The main modification proposed for Confirmative IRDs is that they add p to DC_{sp}^* rather than to DC_{ad}^* . The proposed models can properly predict the negative bias of Contradictory IRDs and the positive bias of Confirmative IRDs.

The proposed account makes some typological predictions for IRDs, but it still remains unclear which contextual factors call for contradictory and confirmative interpretation. I hope, however, that the way I framed the issue is a useful step in the right direction.

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