Polar initiatives in an inquisitive discourse model*
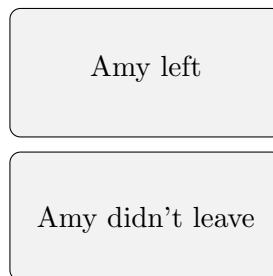
Donka F. Farkas and Floris Roelofsen

LUSH Colloquium, Leiden University, January 16, 2013

1 Introduction

Polar initiatives:

Discourse moves that induce a choice between two alternatives that are mutually exclusive and jointly exhaustive.

<div style="text-align:center">

Amy left

Amy didn't leave

</div>

Default cases:

(1)   Amy left.   [falling declarative]

(2)   Did Amy leave?   [polar interrogative]

Non-default cases:

(3)   Amy left, didn't she?   [tag interrogative]

(4)   Amy left?   [rising declarative]

(5)   Didn't Amy leave?   [high negation polar interrogative]

All these discourse moves induce a choice between two mutually exclusive and jointly exhaustive alternatives: the one in which Amy left and the one in which she didn't leave.

---

*This talk presents material from a paper entitled *Polar initiatives and polarity particles in an inquisitive discourse model* (Farkas and Roelofsen, 2012), which is available via the inquisitive semantics website. We focus today on polar initiatives. The paper also has a detailed discussion of responses to such initiatives, in particular those involving polarity particles (e.g., *yes* and *no*).

Syntactic form and discourse moves:

Syntactic form	Discourse move
Falling declarative	Default assertion
Polar interrogative	Default polar question
Rising declarative	Tentative assertion
Tag interrogative	Tag question
HN polar interrogative	HN polar question

Main syntactic difference between default and non-default cases:

Default cases embed:

(6)   a.   Bill knows that Amy left.   [falling declarative]
          b.   Bill knows whether Amy left.   [polar interrogative]

Non-default cases don't embed:

(7)   a. *Bill knows whether not Amy left.   [high negation polar interrogative]
          b. *Bill knows that Amy left, didn't she.   [tag interrogative]
          c. #Bill knows that Amy left?   [rising declarative[1]]

Main difference in discourse effect between default and non-default cases:

default assertions $-------$ non-default cases $---------$ default questions
$\hookrightarrow$ commit to one alternative $\hookrightarrow$ different kinds of biases $\hookrightarrow$ neutral

General goals of our project:

- Characterize the discourse moves of making a *default assertion* and asking a *default polar question* so as to capture similarities and differences between them

  - some similarities:
    * common sentence radical;
    * *yes/no* responses;
    * both steer the conversation toward a state where participants agree on whether Amy left or not
  - some differences:
    * assertion commits speaker to Amy having left; polar question does not
    * assertion doesn't require overt response, polar question does

- Connect the contextual effect of declaratives/polar interrogatives with their semantics

- Expand the characterization of these two default cases to account for non-default cases

---

[1]This example is fine if interpreted as a rising declarative root clause, but it cannot be interpreted as claiming that Bill stands in the *knowing* relation with the content of the rising declarative *Amy left?*

Strategy for dividing labor between semantics and discourse component:

- Default initiatives: minimize burden on discourse component; maximize burden on semantics

- Non-default initiatives: maximize burden on discourse component; minimize burden on semantics

Justification:

- Non-default cases involve a **marked form**, with limited distribution, e.g. no embedding

- We assume that this marked form partly determines/signals the intended contextual effect

- Thus, in these cases the contextual effect does not have to be derived completely by the compositional semantics

- Default cases on the other hand involve **unmarked forms**, with unrestricted distribution

- In these cases, the contextual effect should be fully predicted by the compositional semantics

Plan for today:

- Basic assumptions about context structure and semantics

- Summary of the account of default cases

- Discuss some of the non-default cases: tags, rising declaratives

2 Assumptions about context structure and semantics

2.1 Assumptions about context structure

Minimum context components needed for default cases:
(Farkas and Bruce (2010) resting on much earlier work)

- List of *discourse commitments* DC_X for each participant X in the conversation

    - Each discourse commitment $\alpha \in DC_X$ is a set of possible worlds
    - X presents herself in the conversation as taking w_a to be contained in each $\alpha \in DC_X$
    - The intersection of DC_X is called the *commitment set* of X, cs_X

- The Table: a stack of **proposals** that have been made in the conversation so far to extend the participants' discourse commitments; if a certain proposal is made—placed on the Table—the conversation is steered toward a state where the proposal is settled (to be clarified below)

Derived components:

- The current *context set* (cs), derived from DC: the smallest set of possible worlds α such that all discourse participants are publicly committed to w_0 being contained in α;

$$cs = \bigcup_{X \in \mathcal{A}} cs_X$$

- Projected context set (*ps*) derived from *cs* and the Table: set of all context sets that would be reached if every proposal on the Table were settled in some way;

$$ps = \{cs \cap \bigcap_{P \in T} \alpha_P \mid \alpha_P \in P \text{ for all } P \in T\}$$

Question that will arise: what additions, if any, need to be made to account for non-default cases? Our partial answer: more structure added to DC_X

2.2 Semantic assumptions: proposals as sets of possibilities
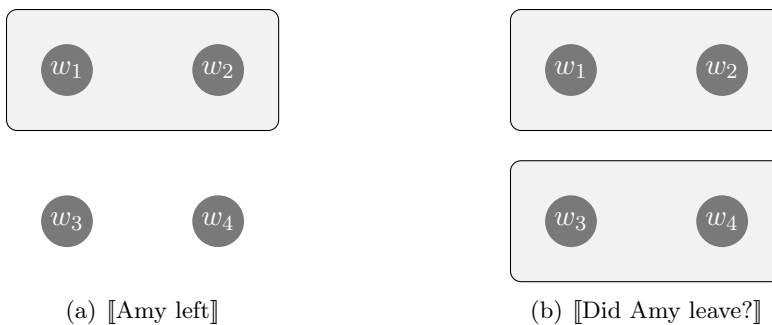
Inquisitive semantics framework:

(Groenendijk and Roelofsen, 2009; Ciardelli and Roelofsen, 2011; AnderBois, 2011, among others)

- Fundamental role of language: provide and request information

- The proposition expressed by a sentence captures both its **informative content** and its **inquisitive content**

- Main advantage for us: allows us to capture the discourse effects of default initiatives in a uniform way

Basic assumptions:

- Proposition expressed by a sentence φ: set of **possibilities**.

- Each possibility in $[\![\varphi]\!]$: set of **possible worlds**.

- Each possibility represents a potential update of the common ground.

Example:

(a) $[\![\text{Amy left}]\!]$ (b) $[\![\text{Did Amy leave?}]\!]$

w_1 and w_2: worlds where Amy left
w_3 and w_4: worlds where Amy did not leave

3 Default initiatives

Common core:

In uttering *Amy left/Did Amy leave?*, the speaker:

1. **commits** to the actual world being contained in at least one of the possibilities in $\llbracket \varphi \rrbracket$, and at the same time

2. **requests** a response from other participants that provides enough information to locate w_a in a specific possibility in $\llbracket \varphi \rrbracket$

The contextual effect of default polar initiatives:

When a participant X uses a default declarative or a default interrogative φ, the discourse context is affected as follows:

a.   The proposition expressed by φ, $\llbracket \varphi \rrbracket$, is entered as the head of the stack on the Table.

b.   The union of all the possibilities for φ, $\bigcup \llbracket \varphi \rrbracket$, is added to DC_X. This means that X publicly commits herself to w_0 being located in $\bigcup \llbracket \varphi \rrbracket$.

Differences between declaratives and polar interrogatives:

- The proposition expressed by a declarative consists of a single possibility, which typically does not cover the entire logical space (unless the declarative is tautological)

- The proposition expressed by a polar interrogative typically consists of two possibilities (unless the interrogative is tautological), which together always cover the entire logical space

- As a result:

  - default assertions commit the speaker to a typically non-trivial possibility and steer conversation towards a state where the other participants commit to it as well

  - default polar questions: trivial commitment; conversation steered towards either agreeing on Amy having left or agreeing on her not having left

  - both default assertions and default polar questions induce a choice between two alternatives, the one where Amy left and the one where she didn't leave

  - default assertion: agreeing on Amy having left is unproblematic; agreeing on her not having left is problematic

  - default polar question: either resolution is in principle fine

Raising and resolving issues:

- issue raised: status of w_a relative to the possibilities placed on the Table

- issue resolved: agreement on status of w_a relative to these possibilities

- positive resolution: w_a is in a specific possibility on the Table

- negative resolution: w_a is in neither of the possibilities on the Table

Result achieved so far:

- semantics of declarative and polar interrogatives completely determines the way they affect the context in the default case

- we generalize over assertions and polar questions deriving their different contextual effects in a uniform way from the difference in their semantics

4   Non-default cases: biased questions and tentative assertions

4.1   Preview

Common to default assertions and polar questions:

- $[\![\varphi]\!]$ is placed on the Table

- the speaker commits to the informative content of the sentence, $\bigcup[\![\varphi]\!]$

    - in the case of default assertions the speaker commits to a typically non-trivial possibility
    - in the case of polar questions the speaker commits to a trivial possibility and presents herself as epistemically neutral relative to the two alternatives in $[\![\varphi]\!]$

Non-default assertions/polar questions:

- Non-default assertions: weaken the commitment associated with default assertions

- Non-default polar questions: renounce the neutrality of default polar questions

Empirical focus:

- Tag questions:

    (8)   a.   Suzanna is joining us, isn't she?
          b.   Suzanna isn't joining us, is she?
          c.   Suzanna is joining us, is she?

- Rising declaratives:

    (9)   This is a persimon?

Main theoretical distinctions that we will draw:[2]

- Speaker commitment as *source* vs. speaker commitment as *dependent*

    - commitment as *source* is based on evidence the Speaker has independently of immediately preceding commitments made by other participants
    - commitment as *dependent* is based on an interlocutor's prior commitment as *source*; signals lack of independent evidence

---

[2]Elaborating on Gunlogson (2008) and Malamud and Stephenson (2011).

- Actual commitments vs. conditional commitments

  - actual commitment: default case
  - conditional commitment: commitment that becomes actual under the condition that another participant commits as well in the future

Refinement at the discourse structure level:

- DC_X: structured into actual (DC_X^a) and conditional commitments (DC_X^c)

- Each of these, further divided into commitments with X as *source* ($DC_X^{a,s}$ and $DC_X^{c,s}$) and commitments with X as *dependent* ($DC_X^{a,d}$ and $DC_X^{c,d}$)
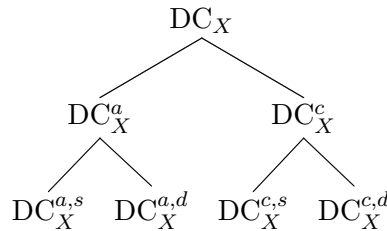
$$DC_X$$
$$DC_X^a \qquad DC_X^c$$
$$DC_X^{a,s} \quad DC_X^{a,d} \quad DC_X^{c,s} \quad DC_X^{c,d}$$

Figure 1: The structure of discourse commitment lists.

4.2 Sources and dependents

Puzzle from Gunlogson (2008):

(10)   A: Stuart is in town.
        B: Yes, I saw him yesterday. / #Yes, I had no idea.

(11)   A: Stuart is not in town.
        B: No, he is on a holiday. / #No, I had no idea.

Main idea in Gunlogson (2008): when commiting to a certain possibility α, a speaker X may signal the nature of the evidence that she has for making that commitment.

(12)   a.   X is *source* for α if she has evidence for α that is independent of her interlocutor's commitment to α in the current conversation.
        b.   X is *dependent* relative to α if her commitment to α is based on an interlocutor's prior commitment to α.

In the case of a default assertion:

- Speaker presents herself as source for her commitment

- Addressee may present herself as co-source or as dependent

Reactions flanked by *yes* and *no* register the responder as source; *aha/oh* register the responder as dependent, in which case some other participant must be source.

(13)   A: Stuart is in town.
        B: Aha / Oh, I had no idea.
        #Aha / #Oh, I knew that already.

- Default case: addition to actual commitment list as source—addition to $\mathrm{DC}_X^{a,s}$

- Non-default case: addition to actual commitment list as dependent—addition to $\mathrm{DC}_X^{a,d}$ (signaled by *aha, oh*)

Correct predictions:

- *aha/oh* cannot be used as answers to polar questions

    (14)   A: Is Susan coming to the movies with us?
            B: Yes. / #Aha/#Oh.

- oh/aha, unlike *yes*, can be used to signal acceptance of an answer to an information seeking question

    (15)   A: Does Frank have any kids?
            B: He has a son and a daughter.
            A: Aha/Oh. / #Yes.

- *yes* can be used to signal acceptance of an answer to a quiz question; *oh/aha* cannot:

    (16)   A: So, Johnny, what's the capital of California?
            J: Sacramento.
            A: Yes, you're right. / #Aha. Let's go on now to a more difficult one.

4.3   Conditional commitments

Conditional commitment:

A participant X's commitment to a possibility α is conditional if she expresses willingness to commit to α under the condition that one of her interlocutors commits to α as well.

If a speaker commits conditionally to α:

- The addressee should be a possible future source for α

- The speaker can be either source or dependent relative to α

    – If source, the speaker is ready to commit to α as source once the addressee ratifies it.

    – If dependent, the speaker is ready to commit to α as dependent if the addressee commits to it as source.

- In either case, a conditional commitment is weaker than an actual commitment.

Introducing conditional commitments rather than actual ones is done via marked discourse moves.

4.4 Questions that commit: tag questions

(17) a. Susan is joining us, isn't she?
  b. Susan isn't joining us, is she?
  c. Susan is joining us, is she?

Terminology:

- Sentence form: *tag interrogatives*

- Discourse move performed: *tag question*

- The adjoined interrogative clause: the *tag*

- The initial declarative clause: the *anchor*

- The unique possibility in the proposition expressed by the anchor: *anchor possibility*

- Examples (17a) and (17b) are **reverse tag questions** (RTQs), which may be **rising** (↑RTQs) or **falling** (↓RTQs)

- Example (17c) is a **same polarity tag question** (STQs); these are always positive, always rising

Hybrid nature of tag questions:

- commit the speaker to anchor in a way that is similar to assertions—speaker bias for anchor

- function as questions in that the addressee is normally supposed to respond; commitment is not categorical

Rising reverse tag questions (↑RTQs)

(18) Suzanna is joining us, isn't she↑?

Intuition:

- ↑RTQ signals that the Sp is epistemically biased in favor of α, the anchor possibility

- ↑RTQ signals that the Sp is ready to accept its reverse on the authority of the Ad

Contextual effects:

- like polar questions in that both α and $\overline{\alpha}$ are possibilities to be considered

- unlike polar questions and like assertions in that Sp is biased toward α

- unlike assertions in that Sp signals readiness to go against her bias on the authority of Ad

The discourse effect of a rising reverse tag question:
A rising reverse tag question with anchor possibility α, uttered by a participant X, has the following effects on the discourse context:

1. The proposition $\{\alpha, \overline{\alpha}\}$ is placed on the Table

2. α is added to $DC_X^{c,s}$

3. $\overline{\alpha}$ is added to $\mathrm{DC}_X^{c,d}$

Note: the fact that ↑RTQs involve conditional commitments fits their non-default nature

Consequences:

- Addressee should be in a position to source either α or $\overline{\alpha}$ and therefore should be in a position to have epistemic authority over α.

- Speaker's epistemic authority over α should be lower than the Addressee's given that she signals readiness to go against her bias on the authority of the Addressee.

- Context should be consistent with Speaker's epistemic bias for α.

Testing the account:

- follow Malamud and Stephenson (2011) in using predicates of personal taste, e.g.:

  (19)   The ice cream is tasty.

- 'judge' (participant whose direct experience is involved) has high epistemic authority and may act as source

- participants with no direct experience: lower epistemic authority than that of the 'judge'

Context 1: Addressee is possible source and Speaker is not

- Addressee is eating ice cream, and therefore Addressee is possible *source* for (19)

- Speaker is not eating ice cream, and therefore not possible *source* for (19)

Predictions for Context 1:

(20)   a.   Is it tasty?
        b. #It's tasty, isn't it↑?

Explanation
↑RTQ presents the Speaker as conditional *source* for (19), which is inappropriate in Context 1

Context 2: Speaker is possible source and Addressee is not

- Sp is eating ice cream and therefore Sp is possible *source* for (19)

- Ad is not eating ice cream and therefore not good *source* for (19)

Prediction for Context 2:

(21)   a. #Is it tasty?
        b. #It's tasty, isn't it↑?

Explanation
Both polar question and ↑RTQ are out because both require Ad to be possible source for (19).

Context 3: Both Speaker and Addressee are possible sources

- Both Sp and Ad are eating ice cream from the same container: both possible *sources* for (19).

Prediction for Context 3:

(22)   It's tasty, isn't it↑?

Explanation
Both participants can be *sources*; Speaker is ready to defer to Addressee.

Additional prediction: response to ↑RTQs can be either *yes* or *no* but not *aha*

Falling reverse tag questions (↓RTQs)

(23)   Suzanna is joining us, isn't she↓?

Intuition: stronger Speaker bias for α; Addressee should still be possible source

The discourse effect of a falling reverse tag question
A falling reverse tag question with anchor possibility α, uttered by a participant X, has the following effects on the discourse context:

1. The proposition $\{\alpha, \overline{\alpha}\}$ is placed on the Table

2. α is added to $\text{DC}_X^{c,s}$

Same as ↑RTQs in that

- signal conditional commitment

Different from ↑RTQs in that

- no conditional commitment to $\overline{\alpha}$ is involved

Different from default assertions in that

- commitment signaled is conditional
- interrogative in form and therefore both α and $\overline{\alpha}$ are added to the Table

Different from polar questions in that

- conditional commitment is involved

Correctly predicted to be bad in contexts where Addressee cannot be source for α, i.e., Context 2.

Common to RTQs:

- contribution to the Table—dictated by interrogative form of the tag
- signal conditional commitment to anchor as source—connected to declarative form of anchor

Contribution of intonation contour

- ↑: Sp readiness to go against own bias on the authority of the Ad
- ↓: stronger Sp commitment to anchor; no overt signal of willingness to go against own bias

Same tag questions (STQs)

(24)   It's tasty, is it?

Intuition:

- Speaker bias in favor of the Addressee being committed to α as source
- Speaker skepticism toward α

The discourse effect of a same tag question

A same tag question with anchor possibility α, uttered by a participant X, has the following effects on the discourse context:

1.   The proposition $\{\alpha, \overline{\alpha}\}$ is placed on the Table
2. α is added to $\mathrm{DC}_X^{c,d}$

Similarities between STQs and other (tag) questions:

- STQs place both α and $\overline{\alpha}$ on the Table, like all the other interrogative-form sentences discussed
- STQs signal Speaker bias for α, just like the other tag questions discussed

Special to STQs:

- Speaker bias for anchor is rooted in Addressee's authority over it

Prediction:

- STQs should be good only in contexts where Sp is not a good source but the Ad is good source and where Sp has reason to believe Ad will commit to anchor
- (24) should be fine in Context 1, where Ad is eating ice cream with gusto and Sp hasn't tasted it yet.

4.5 Assertions that don't commit: rising declaratives

Extensively discussed by Gunlogson (2001, 2008).

(25)   That's a persimmon?

Intuition:

- Assertion-like in that some type of commitment to α is expressed

- Question-like in that commitment is contingent on Addressee's ratification

The discourse effect of a tentative assertion

A tentative assertion, which involves the utterance of a rising declarative expressing the proposition $\{\alpha\}$ by a participant X, has the following effects on the discourse context:

1.   The proposition $\{\alpha\}$ is placed on the Table

2. α is added to $\mathrm{DC}_X^{c,s}$

Tentative assertions require both Speaker and Addressee to be possible sources but given the conditional commitment expressed, the Speaker presents herself as having less epistemic authority over α than the Addressee; she requires Addressee ratification in order to commit to α even though she has some independent reason to do so.

Open issues:

- role of negation; why STQs are always positive

- other biased questions: HNQs

5   Conclusion

Aims:

- balance the semantic and discourse facets of our analysis of various types of declaratives and polar interrogatives in such a way as to separate default cases from more complex ones

- account for all the default cases in a uniform way

- extend the account to non-default cases

Results:

- Commonalities across all the cases we considered:

    - semantic core: all sentence-types express sets of possibilities

    - uttering a sentence φ raises the issue of locating the actual world within one of the possibilities in $[\![\varphi]\!]$

    - moreover, it commits the Speaker (conditionally or unconditionally) to the informative content of the sentence: w_a must be located within the union of the possibilities in $[\![\varphi]\!]$

- Differences:

  - singleton vs. non-singleton set of possibilities
  - trivial vs. non-trivial commitment
  - actual vs. conditional commitments
  - commitment as source or as dependent

References

AnderBois, S. (2011). *Issues and alternatives*. Ph.D. thesis, University of California Santa Cruz.

Ciardelli, I. and Roelofsen, F. (2011). Inquisitive logic. *Journal of Philosophical Logic*, **40**(1), 55–94.

Farkas, D. and Bruce, K. (2010). On reacting to assertions and polar questions. *Journal of semantics*, **27**, 81–118.

Farkas, D. and Roelofsen, F. (2012). Polar initiatives and polarity particle responses in an inquisitive discourse model. Presented at the Amsterdam Colloquium, December 2011, and at the Newcastle Workshop on the Syntax of Answers to Polar Questions, June 2012.

Groenendijk, J. and Roelofsen, F. (2009). Inquisitive semantics and pragmatics. Presented at the Workshop on Language, Communication, and Rational Agency at Stanford, May 2009.

Gunlogson, C. (2001). *True to Form: Rising and Falling Declaratives as Questions in English*. Ph.D. thesis, University of California at Santa Cruz.

Gunlogson, C. (2008). A question of commitment. *Belgian Journal of Linguistics*, **22**, 101–136.

Malamud, S. and Stephenson, T. (2011). Three ways to avoid commitments: Declarative force modifiers in the conversational scoreboard. In *Proceedings of the 15th Workshop on the Semantics and Pragmatics of Dialogue*, pages 74–83.