

## RHETORICAL QUESTIONS AS QUESTIONS\*

Ivano Caponigro  
University of California, San Diego  
(ivano@ling.ucsd.edu)

Jon Sprouse  
University of Maryland at College Park  
(jsprouse@umd.edu)

### Abstract

We argue that rhetorical questions are semantically the same as ordinary questions. New data is presented to show that rhetorical questions allow for answers and the range of their answers is the same as ordinary questions. An analysis is proposed according to which rhetorical and ordinary questions only differ at the pragmatic level: a question is interpreted as a rhetorical question when its answer is known to the Speaker and the Addressee, while it is interpreted as an ordinary question when its answer is not known to the Speaker. We model Speaker's and Addressee's mutual and individual knowledge by adopting Stalnaker's (1978) notion of 'Common Ground' and enriching it, along the lines of Gunlogson (2001).

### 1 The Puzzle: Rhetorical Questions vs. Ordinary Questions

Imagine the following situation. You are on the search committee for a semantics position, look at Onavi's job application, and see that he hasn't taken any class or done any work in semantics. Then, you utter:

- (1) I don't think we should have Onavi on our short list. (After all,) *what does he know about semantics?*

The string in italics in (1) is usually called a *Rhetorical Question* (henceforth, RQ). It looks like an interrogative clause,<sup>1</sup> but it does not require an answer, and it feels "semantically equivalent" to the declarative clause *He knows nothing about semantics*.

Now imagine a slightly different situation. Somebody suggests hiring Onavi for a syntax position. Since you want your new syntactician to know at least a bit of semantics, you utter:

- (2) Onavi looks like an interesting syntactician. *What does he know about semantics?*

The string in italics in (2) is identical to the one in (1). It looks like an interrogative and now it does require an answer and no longer feels "semantically equivalent" to a declarative clause. We will call these interrogative clauses *Ordinary Questions* (henceforth, OQs) to distinguish them from RQs.

This is the puzzle this paper is about. Why does the very same string of words in (1) and (2) above seem to exhibit very different semantic and pragmatic properties, according to the situation? More generally, why do RQs look like OQs but at the pragmatic level do not require an answer and at the semantic level "feel" equivalent to declaratives?

---

\* Thanks to Daniel Büring, Gennaro Chierchia, Donka Farkas, Lydia Grebenyova, Hannah Rohde and Maribel Romero. Usual disclaimers apply.

<sup>1</sup> Following Groenendijk and Stokhof (1996), we will use the term *interrogative (clause/sentence)* to refer to a particular kind of syntactic structure that is characterized by a certain word order, intonation, and/or lexical items, while *question* will be used to refer to the semantic content of an interrogative.

This is our solution to the puzzle in a nutshell. RQs and OQs are semantically the same, but pragmatically different. In particular, a RQ is an interrogative clause being uttered in a context in which both the Speaker and the Addressee know the answer to it, while an OQ is still an interrogative clause, but being uttered in a context in which the Speaker does not know the answer to it – the Addressee may or may not know the answer. In other words, the difference between RQs and OQs is just a matter of the Speaker’s and Addressee’s knowledge and beliefs with respect to the answer to the question under discussion.

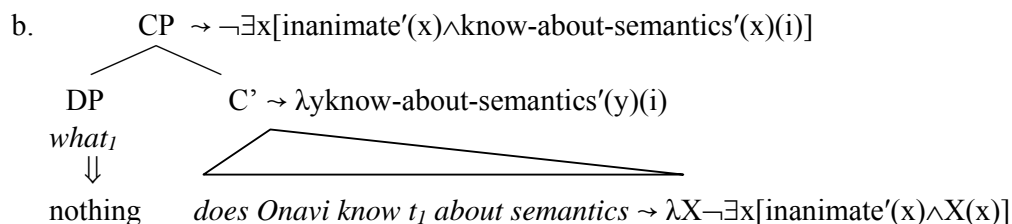
The paper is organized as follows. In §2, we briefly discuss previous approaches that have argued in one way or another that RQs and OQs are semantically different. In §3, we present new data showing that RQs semantically behave like OQs: RQs allow for the same kinds of answers as OQs. The difference with OQs is in the pragmatic status of those answers: known to both Speaker and Addressee in the case of RQs, unknown to the Speaker in OQs. In §4, we formalize our pragmatic analysis by means of an enriched version of Stalnaker’s (1978) notion of Common Ground and show how it accounts for the many similarities and the few crucial differences between RQs and OQs. We also show that our account predicts a pragmatic typology for interrogatives that is supported by the data. Finally, we mention some open issues (§5) and conclude (§6).

## 2 Previous approaches

Three kinds of approaches have been suggested to handle the puzzle above. According to them, RQs are turned into negative statements at some point of the semantic derivation, or they are actually interrogatives with no answer, or, finally, they are full-fledged OQs, but impose restrictions on the kind of answer they allow for. We will very briefly discuss each approach in turn.

*RQs as negative statements.* It has been proposed that RQs are interrogatives syntactically, but are semantically equivalent to negative statements (e.g. Sadock 1971, 1974; Progovac 1993; Han & Siegel 1996; Han 2002). If a RQ contains a wh-word, “the wh-phrase maps onto a negative quantifier, as the result of a post-LF derivation” (Han 2002: 220). (3) shows the crucial steps of the post-LF derivation of the RQ in (1) according to Han (2002).

(3) a. What<sub>t<sub>1</sub></sub> does Onavi know t<sub>1</sub> about semantics?



This approach has several problems. According to it, grammar would treat constructions that are syntactically identical like RQs and OQs in a completely different way semantically. Wh-words would behave like negative quantifiers only in RQs; everywhere else, they would have a different meaning; or, an ad hoc semantic rule that turns a wh-word into a negative quantifier only in RQs. Finally, this approach would not be able to account for the many differences between RQs and statements and the many similarities between RQs and OQs that we discuss below (§??).

*RQs as questions with no answer.* Ladusaw (1979) and Gutiérrez-Rexach (1997) argue that RQs should be analyzed as OQs whose answer-set is empty. Therefore, they cannot be answered or can receive only negative answers. As we will see soon (§3.2, §3.3), RQs can be answered and their answers do not need to be negative.

*RQs as information seeking questions.* Van Rooy (2003) treats RQs as true information seeking OQs. The differences with OQs are accounted for by appealing to a general mechanism of how information is conveyed and the restrictions that are imposed by lexical items in RQs like strong Negativity Polarity Items (NPIs) such as *give a damn* (more on strong NPIs in §3.6). We will not go into a detailed discussion of this proposal. For our purposes, it is enough to notice that this approach predicts that, like an OQ, a RQ has to be answered and that the Addressee is the only one who may answer it. This prediction is not borne out. Unlike OQs, the Speaker herself can answer RQs, not just the Addressee. Also, unlike OQs, the Addressee can reply to a RQ with an expression conveying agreement like “Yeah, you’re right”. An example is given in (4). We will return to this issue in §3.6 and §4.4.

- (4) - QUESTION by the Speaker: *Who cares about you?*  
 - ANSWER by the Speaker: *Nobody.*  
 by the Addressee: *Nobody / Yeah, you’re right.*

### 3 New data: RQs and OQs are the same semantically (and syntactically)

In this section, new data is presented supporting the conclusion that RQs semantically behave like OQs at the semantic level. We start by introducing some useful tools to overtly mark when we are dealing with a RQ or an OQ (§3.1). Then, we show that RQs allow for answer, like OQs and unlike statements (§3.2), and that the answer they allow for are of the same kinds as OQs (§3.3). We then bring some experimental evidence in favor of the conclusion that, like OQs, RQs in English can have more than one wh-word (§3.4) and RQs can be embedded, like OQs (§3.5). Finally, we present and briefly discuss some differences between RQs and OQs (§3.6).

#### 3.1 RQs vs. OQs: Useful tools to mark the distinction<sup>2</sup>

If an interrogative clause is introduced by *after all* or followed by a *yet*-clause, then it can only be a RQ (Sadock 1971).

- (5) a. After all, who helped Luca when he was in trouble?  
 b. Who helped Luca when he was in trouble? Yet he managed to become what he is now.

If an interrogative clause is introduced by *I’m really curious* or *I really don’t know*, then it can only be an OQ:

- (6) a. I’m really curious: who helped Luca when he was in trouble?  
 b. I really don’t know: Who helped Luca when he was in trouble?

If a question contains a strong Negative Polarity Item (NPI) like *lift a finger*, *budge an inch*, *eat a bite*, *give a damn*, then it can only be a RQ.

- (7) a. After all, who lifted a finger to help Luca?  
 b. Who gave a damn when Paolo was in trouble? Yet he made it.
- (8) a. #I’m really curious: Who lifted a finger to help Luca?  
 b. #I really don’t know: Who gave a damn when Paolo was in trouble?

---

<sup>2</sup> Bartel (1999) reports an intonational contrast between wh-RQs and wh-OQs in English: wh-RQs have a fall in the end, while wh-OQs a rise. Banuazizi and Cresswell (1999) show *yes/no* RQs fall more often than OQs, but still less than half of the time. Further research is needed.

### 3.2 RQs allow for an answer, while statements do not

Under the approach to RQs outlined in §2 according to which RQs are semantically equivalent to negative statements, one would expect RQs to behave similarly to statements. However, while negative statements never allow for an answer, RQs readily allow either the Speaker or Addressee to answer. Imagine the following situation. Both the Speaker and Addressee know that Luca was the only one who was still dancing at the party last night at 2 am and both know that the other knows it as well. Then, the Speaker could utter the RQ and answer it or let the Addressee answer it, as in (9).

- (9) SPEAKER: You should stop saying that Luca didn't like the party last night. *After all, who was the only one that was still dancing at 3am?*

ADDRESSEE or SPEAKER: Luca

In the very same situation, the Speaker could utter the statement in (10), rather than the RQ in (9). Although the statement feels “equivalent” to the RQ, no answer is allowed, regardless if it comes from the Speaker or the Addressee.

- (10) SPEAKER: You should stop saying that Luca didn't like the party last night. *After all, Luca was the only one that was still dancing at 3am!*

ADDRESSEE or SPEAKER: #Luca

Given that RQs allow for an answer while statements do not, any approach that argues that RQs are statements must attempt to account for this asymmetry. In contrast, an approach like ours in which RQs are analyzed as questions predicts this contrast and captures this asymmetry for free.

### 3.3 RQs allow for more than just negative answers

Under the approach to RQs outlined in §2 according to which RQs are analyzed as questions whose answer set is empty, one would expect that the only answers that are possible with RQs are negative answers. This prediction is not borne out. There are situations in which RQs can only receive a positive answer, as in (11) and (12). The negative answer *Nobody* would sound awkward in either case.

- (11) Situation: Mina helped Luca when he was in trouble and both the Speaker and the Addressee are aware of that. Now Luca adores Mina for helping him.

SPEAKER: It's understandable that Luca adores Mina. *After all, who helped him when he was in trouble?*

ADDRESSEE or SPEAKER: Mina / #Nobody

- (12) Situation: All faculty members voted for the current chair months ago and now everyone is complaining about him to the students. Both the Speaker and Addressee are students.

SPEAKER: They should stop complaining about the chair to us. *After all, who voted for him?*

ADDRESSEE or SPEAKER: (All of) them / #Nobody

Even more striking, there are RQs that can never receive a negative answer, no matter what the situation is. A negative answer to the RQ in (13) would be non-sensical since it is (still) the case that everybody has a biological mother.

- (13) SPEAKER: You should always help your mom if she needs your help. *After all, who gave birth to you?*

ADDRESSEE or SPEAKER: Her / My mom / Your mom / #Nobody

Given that RQs allow for more than just negative answers, just like OQs, any approach that analyzes RQs as questions whose answer set is empty must introduce additional machinery to account for the possibility of non-negative answers. In contrast, the possibility of non-negative answers is expected under an approach like ours in which RQs are analyzed as semantically identical to OQs.

### 3.4 RQs with multiple wh-words

If RQs and OQs are indeed semantically equivalent, then one would expect the parallelism to extend to questions involving multiple wh-words. In particular, we would expect languages that allow OQs with multiple wh-words (MOQs) to also allow RQs with multiple wh-words (MRQs). This prediction seems to be borne out in a language like Japanese, as shown in (14).

- (14) Kekkyoku, dare-ga nani-o katta-to-iu no?  
After all, who what bought-C Q  
'After all, who bought what?'

In English, the situation is slightly more complicated, in that MRQs only seem to be possible with an ordering word such as *first*:

- (15) You shouldn't be surprised that I punished Pablo rather than Lapo.  
*After all, who hit who first? / ?After all, who hit who?*

This requirement may be related to the availability of single-pair readings in the two languages: it has been observed that Japanese freely allows single-pair readings in MOQs, while English only allows single-pair readings with an ordering word (Wachowicz 1974, Hagstrom 1998). If this correlation holds, it might suggest that RQs generally require a single-pair reading to be felicitous, although more research is required (see also Sprouse *submitted*).

To confirm the availability of MRQs in English, a pilot acceptability judgment experiment was conducted. Twenty-four undergraduates completed a written questionnaire that included 1 token each of MRQs and MOQs with ordering words such as *first*, as well as an appropriate context story. Participants were asked to i) rate the acceptability of the multiple wh-question on a scale from 1 to 7, and ii) choose a potential answer for the multiple wh-question from a list of choices. Examples of the testing material are given in (16) and (17).

(16) **Example of MRQ**

*Murray danced with Brent's girlfriend at the dance while Brent got some punch. So, while Murray went to the bathroom, Brent danced with Murray's girlfriend. As Murray got angry, Brent said, "You can't be angry – after all, who danced with who first?"*

QUESTION: After all, who danced with who first?

RANKING: 1 2 3 4 5 6 7

MEANINGS: a) Murray danced with Brent's girlfriend first

b) Brent danced with Murray's girlfriend first

c) No possible meaning, it isn't an acceptable rhetorical question

(17) **Example of MOQ**

*Pat and Jamie had been friends for a long time, but finally went out on a date together last night. After much nervousness, Pat leaned in and kissed Jamie. The ecstatic Jamie then returned the favor.*

QUESTION: Who danced with who first?

RANKING: 1 2 3 4 5 6 7

ANSWER: a) Pat

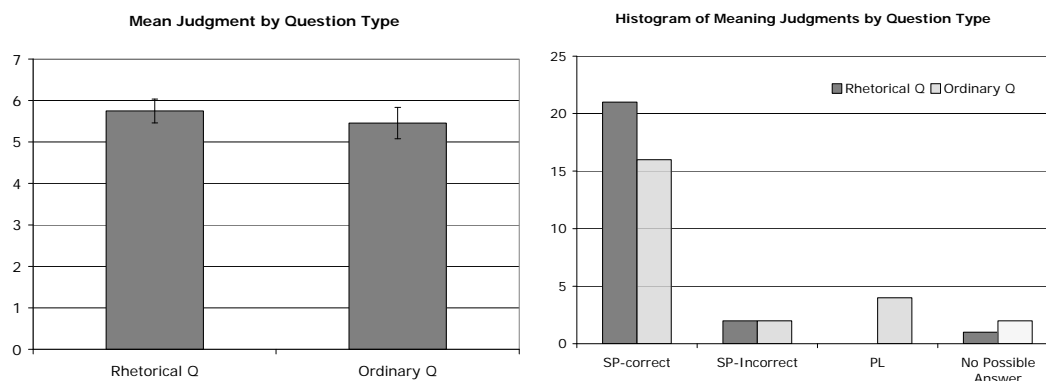
b) Pat, Jamie

c) Pat, Jamie; Jamie, Pat

d) No possible answer, it is not a possible question in English

If MRQs are as equally possible as MOQs, one would expect the acceptability of the two conditions to be statistically identical. The results for the rating task are summarized in the table in (18)

(18) **Rating results from pilot experiment, N=24**



The difference in judgment between MRQs and MOQs is insignificant by t-test:  $t(23)=0.73$ ,  $p=.48$ . Furthermore, a histogram of the results for the secondary question reveals a nearly identical distribution, and confirms that the participants consider both constructions acceptable and answerable by a single pair answer. Thus, the data confirms the prediction that MRQs should be equally as acceptable as MOQs, if RQs are semantically identical to OQs.

### 3.5 Embedded RQs

If RQs are syntactically and semantically like OQs, they are expected to be embeddable. The prediction is borne out. A relevant situation must be built in which we make sure that the answer to the embedded question is already known. In (19), the matrix clause *Should I even ask* seems to be biased toward an interpretation in which the answer to the embedded question is known (i.e. The boss should not ask because everyone knows that no one will care if she stops coming to work), and the licensing of the strong NPI *give a damn* is clear evidence that the embedded question is an RQ.

(19) SITUATION: No one at the office likes the boss, and the boss knows this. One day she gets fed up with the situation, and says:

SPEAKER: Should I even ask who would give a damn if I stopped coming to work?

### 3.6 Differences between RQs and OQs

Despite the overwhelming similarities between RQs and OQs presented in this section, there are a few differences. Let's start by looking at two that are related and our approach to RQs can easily handle. First, the situation in which a RQ can be used is not the same as an OQ. Second, answers are obligatory with OQs and can only come from the Addressee in order for a discourse to be felicitous. On the other hand, answers are optional with RQs and either the Addressee or the Speaker can give them. For instance, the situation in (20) is such that the Speaker does not know who helped Luca. Then, the question can only be interpreted as an OQ and only the Addressee can answer (and has to). The situation is different in (21): now the Speaker also knows that nobody helped Luca, not just the Addressee. The question can now be interpreted only as a RQ. Either the Addressee or the Speaker can answer it, but neither of them has to.

- (20) Situation: The Speaker thinks that somebody must have helped Luca when he was in trouble, though he does not know who. The Speaker knows that the Addressee is a good friend of Luca's and therefore he is likely to be aware of what happened to Luca. Actually, nobody helped Luca, and the Addressee knows that.

SPEAKER: *Who helped Luca when he was in trouble?*

ADDRESSEE: Nobody / # <NO ANSWER>

or

SPEAKER: #Nobody / # <NO ANSWER>

- (21) Situation: Nobody helped Luca when he was in trouble, and both the Speaker and the Addressee are aware of that. They both know that the other is aware of that as well. Now Luca doesn't trust people.

SPEAKER: It's understandable that Luca doesn't trust people anymore. *After all, who helped him when he was in trouble?*

ADDRESSEE: Nobody / <NO ANSWER>

or

SPEAKER: Nobody / <NO ANSWER>

This asymmetry falls out directly if the answer to a RQ is already known to both the Speaker and the Addressee, as there is no request for information, unlike the case of an OQ, in which the answer is only (potentially) known to the Addressee. More on this in §4.3, after we have introduced our proposal in detail.

Another difference is that RQs require the question to be formulated in the most suitable, or most precise, way for retrieving the answer. For instance, in the OQ in (22), a wh-word such as *who* allows for both an answer describing the people at the party (the definite NP) and an answer describing the number of people at the party (the numeral NP).

- (22) SPEAKER: I heard your party went well. *Who was there?*

ADDRESSEE: **The** people I actually like / **More than fifty** people

On the other hand, in the identical RQ in (23), the wh-word *who* only allows for an answer describing the people. An answer reporting the number of people is infelicitous.

- (23) SPEAKER: You should stop saying that your party was not a success. *After all, who was there?*

ADDRESSEE or SPEAKER: **The** people I actually like / #**More than fifty** people

In order to license an answer describing the number of people in an RQ, a wh-phrase such as *how many* must be used, which no longer licenses an answer describing the people at the party, as shown in (24).

(24) SPEAKER: You should stop saying that your party was not a success. *After all, how many people were there?*

ADDRESSEE or SPEAKER: #**The** people I actually like / **More than fifty** people

This suggests the type of wh-word that is chosen affects the type of answer that is licensed to a larger degree in RQs than OQs. If, as we just saw, RQs can only be uttered when both the Speaker and Addressee have complete knowledge of the situation, then intuitively it makes sense that the RQ chosen must be the most suitable or most precise question possible in order to facilitate a straightforward access to the commonly known answer. This is clearly related to the more general issue of the role of RQs in the discourse, whose investigation we leave to future research. We briefly speculate on it in § 4.4.

Finally, as we saw in §3.1, strong NPIs like *lift a finger* or *give a damn* are licensed in RQs, though in all the other contexts they occur, they require a c-commanding negation within the same clause. This is the main piece of evidence in favor of those approaches that argue that RQs are turned into negative statement at some LF level. We suggest that an approach along the line of Guerzoni (2003, 2004) can account for these facts by analyzing strong NPIs as presupposition triggers and by means of a general mechanism of presupposition projection in questions. Roughly, when strong NPIs occur in questions, their presupposition ends up being identical to the unique complete answer to the question. The answer will, therefore, be known to both the Speaker and the Addressee. We refer to Guerzoni's work for the details of her proposal.

### 3.7 Conclusion

To sum up, this section has presented evidence that RQs do not behave like statements, or even like some special kind of questions, but rather like OQs: they allow the same range of answers as OQs, can be embedded, and receive basically the same acceptability judgments as OQs. Sprouse (*submitted*) shows that RQs form a natural syntactic class with OQs cross-linguistically, as RQs display combinations of syntactic properties that have previously been observed in OQs. In other words, there can be no syntactic analysis that uses RQ or OQ as primitives, as they show identical ranges of typological variation. In conclusion, there is no compelling evidence supporting a syntactic and/or semantic difference between RQs and OQs. They are the same syntactic and semantic object. However, we observed that the conditions under which RQs can be used and answered are different from OQs. In the next section, after introducing our proposal in detail, we will show how these many similarities and few differences can be accounted for. In particular, we will argue for a purely pragmatic account of the differences.

## 4 Proposal: A pragmatic analysis of RQs

### 4.1 Definitions: OQs and RQs

The previous discussion on the new data has shown that there is no independent justification to distinguish between RQs and OQs at the semantic level (they allow for the same kinds of answers) nor to argue that RQs with a negative answer form a different class from RQs with a positive answer. In (25)-(26) below, we give a definition of OQs and RQs respectively that is consistent with our previous findings.



(25) *Definition of OQs*

An OQ is an interrogative clause whose answer is not known to the Speaker, but the Speaker thinks the Addressee may know it. An answer is required in order for the dialogue to be felicitous. Only the Addressee can answer.

(26) *Definition of RQs*

A RQ is an interrogative clause whose answer is known to the Speaker and the Addressee, and they both also know that the other knows the answer as well. An answer is not required, but possible. Either the Speaker or the Addressee can answer.

According to these definitions, RQs and OQs are both questions semantically and do not have any semantic feature that distinguishes them. They differ only in their pragmatics, more precisely the conditions under which they can be uttered.

### 4.2 Semantics of RQs and OQs

Following Groenendijk and Stokhof (1989), we assume that the semantic contribution or intension of an interrogative clause (Interr) is a partition of all (contextually relevant) possible worlds. Each cell of the partition is a set of possible words that identifies the proposition corresponding to a possible complete answer to that interrogative. The denotation or extension of that interrogative in the world  $w$  then is the proposition that constitutes its complete true answer in  $w$  (27).

(27)  $\llbracket \text{Interr} \rrbracket^w = p : p$  is the complete true answer to Interr in  $w$

Let's look at a couple of examples. If Andrea and Luca are the only (human) individuals in our domain, then the intension of constituent interrogative *Who walks?* will be the partition in (28). The top cell is the set of all worlds in which both Luca and Andrea walk, which identifies the proposition 'Andrea and Luca are the ones who walk'. The cell right below is the set of all worlds in which Andrea walks, but not Luca, which identifies the proposition 'Andrea is the one who walks'. And so on. If the world  $w_1$  is within the top most cell, then the extension or denotation of *Who walks?* in  $w_1$ , would be just the proposition 'Andrea and Luca are the ones who walk'.

(28)

$\llbracket \text{Who walks?} \rrbracket =$

$\{w: \llbracket \text{walk} \rrbracket^w = \{\text{Andrea and Luca}\}\}$ $p = \text{Andrea and Luca are the ones who walk}$
$\{w: \llbracket \text{walk} \rrbracket^w = \{\text{Andrea}\}\}$ $p = \text{Andrea is the one who walks}$
$\{w: \llbracket \text{walk} \rrbracket^w = \{\text{Luca}\}\}$ $p = \text{Luca is the one who walks}$
$\{w: \llbracket \text{walk} \rrbracket^w = \emptyset\}$ $p = \text{nobody walks}$

If we now consider the yes/no interrogative *Does Luca walk?*, its intension is going to be the partition in (29), which has only two cells. The top cell contains all the worlds in which the proposition 'Luca walks' is true, while the other cell contains the complement set, i.e. all the worlds in which 'Luca walks' is false. If the world  $w_1$  is within the top cell, then the extension or denotation of *Does Luca walk?* in  $w_1$ , would be just the proposition 'Luca walks'

(29) $\llbracket \text{Does Luca walk?} \rrbracket =$	$\{w: \llbracket \text{walk}(l) \rrbracket^w = 1\}$ p= Luca walks
	$\{w: \llbracket \text{walk}(l) \rrbracket^w = 0\}$ p= Luca doesn't walk

In §3, we concluded that there is no evidence of any semantic difference between RQs and OQs. Therefore, the semantic analysis for a generic interrogative clause we just sketched applies to both RQs and OQs. They both introduce a partition and, in a given world, denote the proposition that is their true complete answer in that world (30).

$$(30) \quad \llbracket \text{RQ} \rrbracket^w = \llbracket \text{OQ} \rrbracket^w = p: p \text{ is the true complete answer to RQ or OQ in } w.$$

### 4.3 Pragmatics of RQs and OQs

The next step is modeling Speaker's and Addressee's mutual and individual knowledge. We do so by adopting Stalnaker's (1978) notion of *Common Ground* (CG) and enriching it, along the lines of Gunlogson (2001).

CG is as a set of propositions representing what the participants in a discourse take to be mutually believed, or at least mutually assumed for the purposes of the discourse. What matters is mutual rather than just shared knowledge/beliefs, since it is crucial that for each proposition  $p$  in the CG, each participant is not only taken to believe  $p$ , but also to be aware that the other participants believe  $p$  as well.

CG allows us to handle Speaker's and Addressee's mutual knowledge. But we also need a way to model their individual knowledge, in order to represent those contexts in which the answer to the question under discussion is not in CG. Let's then define *Speaker's Beliefs* (SB) as a set of propositions representing what the Speaker believes or assumes for the purpose of discourse:

$$(31) \quad \text{SB} = \{p: p \text{ is a belief of the Speaker}\}$$

Similarly, *Addressee's Beliefs* (AB) are modeled as a set of propositions representing what the Addressee believes or assumes for the purpose of discourse:

$$(32) \quad \text{AB} = \{p: p \text{ is a belief of the Addressee}\}$$

Based on the notion of CG and SB and AB we just introduced, we can model the Speaker' and the Addressee's mutual knowledge/beliefs by defining the *Speaker' and Addressee's Common Ground* ( $\text{CG}_{S-A}$ ) as a set of propositions representing what the Speaker and the Addressee take to be mutually believed, or at least mutually assumed for the purposes of the discourse:

$$(33) \quad \text{CG}_{S-A} = \{p: p \text{ is mutually believed by the Speaker and the Addressee}\}$$

We now have all that we need to model the pragmatic difference between RQs and OQs we have been arguing for. Let's start from OQs. A question  $Q$  is an OQ if and only if the following conditions of use are satisfied: the Speaker doesn't have beliefs about the complete true answer to  $Q$ , that is if the answer is not among the Speaker's beliefs (34).

$$(34) \quad Q \text{ is an OQ iff } \llbracket Q \rrbracket^w \notin \text{SB}$$

If the answer is not among the Speaker's beliefs, then it is not going to be in the CG either. The Addressee's answering a question can then be seen as a way to add to CG the proposition that constitutes the complete true answer to the question.

On the other hand, a question  $Q$  is a RQ if and only if the following conditions of use are satisfied: the Speaker and the Addressee already mutually believe the true complete answer to  $Q$ , that is if the answer is part of the Speaker' and Addressee's CG (35).

(35)  $Q$  is a RQ iff  $\llbracket Q \rrbracket^w \in CG_{S-A}$

#### 4.4 Accounting for the similarities and differences between RQs and OQs

In §3, we noticed several similarities and a few differences between RQs and OQs. With the semantic and pragmatic analysis we sketched §4.2 and §4.3, we can now give these properties a uniform account. We noticed that RQs can be answered. This is now expected: RQs are semantically questions, like OQs. We also observed that RQs can be answered by the Speaker as well. This is no longer surprising: our analysis requires the answer to a RQ to be in the  $CG_{S-A}$ , i.e. to be known to the Speaker as well. On the other hand, we saw that RQs do not need to be answered. This is because their answer is already in the  $CG_{S-A}$ , i.e. it is known to both the Speaker and the Addressee, and no new proposition is added to the  $CG_{S-A}$  by uttering the answer. Unlike OQs, RQs are not asked to trigger an increase in the amount of mutual knowledge, but their goals seems to be more to highlight a proposition in the CG, as the starting point of a discourse or its natural "obvious" conclusion. A RQ "feels" semantically like a statement that does not assert anything new because both the Speaker and the Addressee know the statement that could be uttered as the true complete answer to the RQ, and they also know that the other is aware of that. In other words, the proposition that is the semantic value of the statement is already in the  $CG_{S-A}$ .

#### 4.5 A typology for interrogatives

As we saw, where the proposition that constitutes the answer to a question is located with respect to the sets of propositions SB, AB, and  $CG_{S-A}$  is crucial in our proposal. We only looked at two options, but four combinations are predicted to be possible and they actually correspond to four attested kinds of interrogatives.

The first option is that the answer is in AB, but not in  $CG_{S-A}$ . In other words, the Speaker does not know the answer, while the Addressee does. As we saw, this is what happens with OQs. The second option is that the answer is in SB, but not in  $CG_{SA}$ , that is, the Speaker knows the answer, but she does not know if the Addressee knows it. This is the case of "Examination"/"Quiz" Qs. Third option: the answer is in  $CG_{S-A}$  (therefore, in SB and AB too): both the Speaker and the Addressee know the answer and they know that the other knows it too. As we saw, this characterizes RQs. Finally, the answer is in neither AB nor SB (therefore, in  $CG_{SA}$  either); in other words, neither the Speaker nor the Addressee know the answer. This is the case of Qs with no answer (at least for a subset of Speakers and Addressees): *What's the meaning of life? Does God exist?*

### 5 Some open issues

Before concluding, we would like to briefly mention a few issues that go beyond the purposes of this paper, but we think they are worth further investigation.

*Positive vs. negative answers.* Most of the time, RQs that would allow for either a positive or a negative answer in principle seem to be strongly biased towards a negative answer. For instance, the RQ in (36)a can receive a negative answer very easily (36)b and we may think that this is due to the fact that we know that castor oil is pretty disgusting for most people. On the other hand, even if we think that (almost) everybody likes ice-cream, still it is hard to answer the RQ in (37)a that asks who likes ice-cream in a positive way (37)b. But it is enough

to ask who does not like ice-cream (38)a to get a negative answer (38)b that is truth-conditionally equivalent to the problematic answer in (37)b.

- (36) a. - After all, who likes castor oil?  
b. - Nobody.
- (37) a. - After all, who likes ice-cream?  
b. - #Everybody.
- (38) a. - After all, who doesn't like ice-cream?  
b. - Nobody.

Although we leave an explanation for the contrast above for further research, we want to point out that answers with universal quantifiers are not unacceptable all the time. If we enrich the context, as in (39)a, then it is pretty easy to imagine a positive answer like those in (39)b.

- (39) a. - (You shouldn't keep complaining about our lack of specials for families with kids.) After all, which passengers can board the plane without a ticket today?  
b. - All the passengers under two / Every passenger under two.

*Yes/No RQs.* In our paper, we focused our attention mainly on constituent RQs. But yes/no RQs exhibit an interesting asymmetry with respect to yes/no OQs. A positive yes/no RQ (40)a requires a negative answer (40)b, while a negative yes/no RQ (41)a requires a positive answer (41)b. In sum, yes/no RQs require an answer of the opposite polarity.

- (40) a. - After all, does everybody like ice-cream?  
b. - No / #Yes
- (41) a. - After all, doesn't everybody like ice-cream?  
b. - Yes / #No

Yes/no OQs do not behave exactly the same. Negative yes/no OQs seem to come with a bias towards a positive answer (at least most of the time).

- (42) a. - Doesn't everybody like ice-cream?  
b. - Yes / #No

## 6 Conclusions

In this paper, we have presented and discussed a new set of data about RQs and argued that RQs are (syntactically and) semantically the same as OQs. Therefore, there is no need to assume that the grammar treats interrogative clauses as two different objects. The distinction between RQs and OQs is just pragmatic in nature. A question is interpreted as a RQ when its answer is known to the Speaker and the Addressee (it is part of their  $CG_{S-A}$ ), while it is interpreted as an OQ when its answer it is not know to the Speaker (it is outside the  $CG_{S-A}$ ). Our pragmatic approach predicts a four-way pragmatic typology for interrogatives that seems to be borne out.

## References

- Asher, N. and Reese, B.: 2005, Negative bias in polar questions, in E. Maier, C. Bary, and J. Huitink (eds), *Proceedings of Sinn und Bedeutung 9 (SuB9)*. [www.ru.nl/ncs/sub9](http://www.ru.nl/ncs/sub9)
- Banuazizi, A. and Creswell, C.:1999, Is that a real question? Final rises, final falls, and discourse function in yes-no question intonation, *Papers from the Thrity-fifth Regional Meeting of the Chicago Linguistics Society (CLS 35)*. Chicago: Chicago Linguistics Society.

- Bartel, C.: 1999, *The intonation of English statements and questions: A compositional interpretation*. New York: Garland.
- Groenendijk, J, and Stokhof, M.: 1989, Type-shifting rules and the semantics of interrogatives, in G.Chierchia, B.Pardee, and R.Turner (eds), *Properties, Types, and Meanings. Volume 2: Semantics issues*. Dordrecht: Kluwer, pp. 21-68.
- Groenendijk, J, and Stokhof, M.: 1996, Questions, in J. van Benthem and A. ter Meulen (eds), *Handbook of Logic and Language*. Amsterdam: North-Holland.
- Guerzoni, E.: 2003, *Why even ask? On the pragmatics of questions and the semantics of answers*. Ph.D. thesis, Massachusetts Institute of Technology, Cambridge, Mass.
- Guerzoni, E. 2004, *Even-NPIs in Yes-No questions*, *Natural Language Semantics* **12**, 319-343.
- Gunlogson, C.: 2001, *True to form. Rising and falling declarative as questions in English*. Ph.D. thesis. University of California, Santa Cruz. (Published by Routledge, London, 2003)
- Gutiérrez Rexach, J.: 1997, The semantic basis of NPI licensing in questions, in B. Bruening (ed.) *MIT Working Papers in Linguistics 31: Proceedings of SCIL 8*, Massachusetts Institute of Technology, Cambridge, Mass., pp. 359-376.
- Hagstrom, P.: 1998, *Decomposing Questions*, Ph.D. thesis, Massachusetts Institute of Technology, Cambridge, Mass.
- Han, C.: 2002, Interpreting interrogatives as rhetorical questions. *Lingua* **112**, 201-229.
- Han, C. and Siegel, L.: 1996, Syntactic and semantic conditions of NPI licensing in questions, *Proceeding of the Fifteenth West Coast Conference on Formal Linguistics (WCCFL 15)*. Stanford: CSLI Publications, pp. 177-191.
- Ladusaw, W.: 1979, *Polarity Sensitivity as Inherent Scope Relations*, Ph.D. thesis, University of Texas at Austin (published by Garland, New York, 1980).
- Progovac, L.: 1993, "Negativity polarity: Entailment and Binding, *Linguistics and Philosophy* **16**, 149-180.
- Rohde, H.: 2006, Rhetorical Questions as Redundant Interrogatives, *San Diego Linguistics Papers* 2, University of California, San Diego, pp. 134-168.
- van Rooy, R.: 2003, Negative Polarity Items in questions: Strength as relevance, *Journal of semantics* **20**, 239-273.
- Sadock, J.: 1971, Queclaratives, *Papers from the Seventh Regional Meeting of the Chicago Linguistics Society (CLS 7)*, Chicago: Chicago Linguistics Society, pp. 223-331.
- Sadock, J.: 1974, *Towards a linguistic theory of speech acts*. New York: Academic Press.
- Sprouse, J.: *to appear*, Rhetorical Questions and Wh-Movement, *Linguistics Inquiry*.
- Stalnaker, R.: 1978, Assertion, in P. Cole (ed.), *Pragmatics: Syntax and Semantics, Volume 9*. New York: Academic Press.
- Truckenbrodt, H.: 2004, Zur Strukturbedeutung von Interrogativsätzen, *Linguistische Berichte* 199.
- Wachowicz, K.: 1974, Against the universality of a single wh-question movement, *Foundations of Language* **11**, 155-166.