

Semantic opposition coordination: An argument for question settlement*

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1. Introduction

- *But* in English has different uses:
 - Counterexpectation, where the first conjunct creates an expectation that is rejected by the second conjunct (e.g. *The player is tall but agile*, whose first conjunct creates the expectation that the player is clumsy, and the second conjunct rejects this expectation);
 - Non-counterexpectational uses, whose first conjunct does not create an expectation that is rejected (e.g. (1a-c)).

(1) *Semantic opposition but*

- a. Oleg bought a Ferrari, but Roma didn't.
- b. Oleg bought a Ferrari, but he didn't buy a Chevy.
- c. Oleg bought a Ferrari, but Roma bought a Chevy.

- This talk focuses on a non-counterexpectational use – *semantic opposition* (following Toosarvandani's 2014 terminology).
 - According to Jasinskaja & Zeevat (2008, 2009) (henceforth *J&Z*), semantic opposition requires the conjuncts to be *doubly distinct* – involve two pairs of contrast (underlined).
 - One of the contrasts is often in polarity.
- I observe that *whereas* has identical behavior to semantic opposition *but*:

(2)a. Oleg bought a Ferrari, whereas Roma didn't.

- b. Oleg bought a Ferrari, whereas he didn't buy a Chevy.
- c. Oleg bought a Ferrari, whereas Roma bought a Chevy.

- Crucially, *whereas* does not have the counterexpectational use that *but* has:

(3)a. #The player is tall, whereas he is agile.

- b. #We were hungry, whereas the restaurants were closed.

- Since *whereas* only has the semantic opposition use, I will use *whereas* in all the examples for clarity, but the analysis applies to semantic opposition *but* as well.
- **Research question:** is there any restriction on the conjuncts of semantic opposition other than double contrast?

* I would like to thank Amir Anvari, Danny Fox and Maziar Toosarvandani for helpful comments. All errors are my own.

1.1. Background and the literature

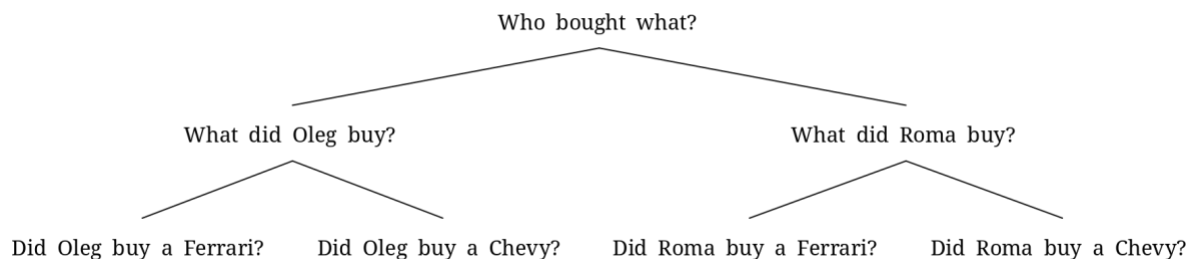
Existing analyses related semantic opposition to the discourse structure via questions

- J&Z and Toosarvandani (2014) both related the conjuncts of semantic opposition to a conversational topic that is represented by a question.
- Toosarvandani followed Roberts' (1996/2012, 2004) question-under-discussion (QUD) framework, an approach that uses questions to model the structure of the discourse. We can also convert J&Z's approach into the QUD framework.
- To understand J&Z and Toosarvandani's approaches, let us first review the background on QUD and questions as partitions.

Background on QUD (Roberts 1996/2012)

- The main goal of discourse is to discover and share information about the world we live in (i.e. to answer the big question *What's the way things are?*) (Stalnaker 1978).
- We must develop strategies for achieving this goal, and these strategies involve subinquiries.
- An interlocutor can pose a question. If this question is accepted by the other interlocutors as answerable, it is added to a stack of QUDs, committing everyone to the common goal of finding the answer. Once it has been answered or is no longer considered answerable, it is removed from the QUD stack.
- As we look for the answers to the QUD, we may follow a Strategy of Inquiry by dividing the QUD into logically related subquestions that are easier to answer.
- For example, in a context with two salient individuals Oleg and Roma, and two types of cars to buy Ferrari and Chevy, we can divide the big question *Who bought what?* in the following way:

(4)



Background on a partition theory of questions (Jäger 1996, Hulstijn 1997, Groenendijk 1999):

- In conversations, we build a common ground of propositions we publicly and collectively accept as true.
- The context set is the set of worlds compatible with all the propositions in the common ground.
- A question is a set of propositions, and it partitions the context set to help us determine in which cell of the partition our world is located.
- A polar question $\phi?$ partitions the context set into two cells ϕ and $\neg\phi$.
- An assertion proposes an update to the context set. Here are some logical possibilities of how it may update the partitioned context set. An assertion may:
 - Select exactly one cell (Figure 1; *precise answer*);
 - Or a proper subset of a cell (Figure 2; *over-informative answer*);

- Or a proper superset of one of the cells, which may contain worlds that are not in the context set (Figure 3).
- I call precise answers and over-informative answers *answers that settle the question*.

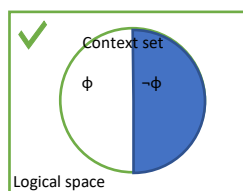


Figure 1
Precise answer

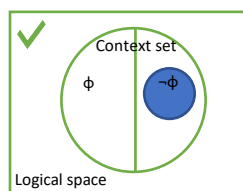


Figure 2
Over-informative answer

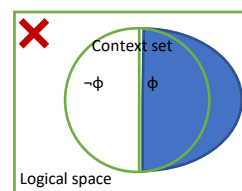


Figure 3
Non-settling answer

(5) Has John stopped smoking?

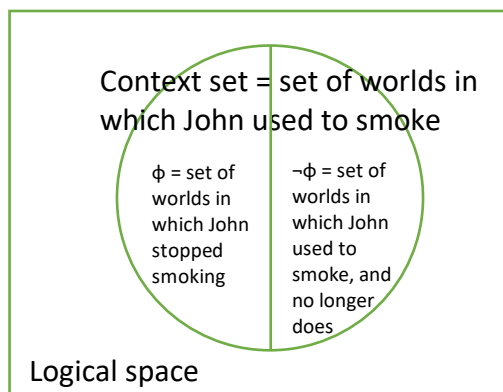
A1: No, he hasn't.

A2: No, he hasn't despite not enjoying it.

A3: He doesn't smoke.

A4: He lives in Paris.

precise answer; Figure 1
over-informative answer; Figure 2
non-settling answer; Figure 3
non-settling answer



Existing analyses of semantic opposition

- J&Z: the conjuncts of semantic opposition must be doubly distinct precise answers to the QUD, where one of the contrasts must be polarity.¹
 - Most semantic opposition examples in the literature were presented without explicit context or QUD because QUDs are often implicit in conversations.
 - As a linguist tries to find out J&Z's prediction for a *whereas*-sentence without knowing the QUD it addresses, they try to find a QUD that would satisfy J&Z's condition given the *whereas*-sentence.
 - If they can find at least one QUD that could satisfy J&Z's condition, then the sentence is predicted to be good (in at least some contexts).
 - If they can't find any QUD that could satisfy J&Z's condition, then the sentence is predicted to be bad.
 - The linguist follows a stepwise procedure to determine J&Z's prediction for a *whereas*-sentence. They first choose a potential QUD (a *wh*-question), then divide this QUD into

¹ Technically, J&Z proposed that the conjuncts must answer a double *wh*-question, with one of the *wh*-phrases being *whether*. I have translated their proposal into the QUD framework with my own interpretation, to compare with Toosarvandani's proposal, which is based on the QUD framework.

two subquestions (polar questions), and finally check if each conjunct is the precise answer to the polar question.

(6) *J&Z's analysis of (2a)*

Oleg bought a Ferrari, whereas Roma didn't.

Step 1. Find a potential QUD: Who bought a Ferrari?

Step 2. Divide the QUD into two polar questions: Did Oleg buy a Ferrari? Did Roma buy a Ferrari?

Step 3. Check if the first conjunct is the positive precise answer to the first polar question: ✓

Step 4. Check if the second conjunct is the negative precise answer to the second question: ✓

- Toosarvandani (2014) interpreted J&Z's proposal slightly differently from me. He interpreted their proposal as: semantic opposition must be doubly distinct *members of the set of propositions* denoted by the QUD.
- Toosarvandani observed that this interpretation of J&Z would incorrectly rule out sentences that use antonyms rather than polarity contrast (e.g. (7)).
 - There is no QUD such that the conjuncts of (7) can be members of the set of propositions denoted by this QUD.
 - If this QUD is *Who is quick?* then the second conjunct is not a member of the set of propositions denoted by it.
 - If this QUD is *Who is slow?* then the first conjunct is not a member of the set of propositions denoted by it.

(7) John is quick, whereas Bill is slow.

(Based on Winter & Rimon 1994:373)

- Toosarvandani thus revised J&Z's proposal, and claimed that the conjuncts must *entail* doubly distinct members of the set of propositions denoted by the QUD.

(8) *Toosarvandani's analysis of (7)*

John is quick, whereas Bill is slow.

Step 1. Find a potential QUD: Who is quick?

Step 2. Divide the QUD into two polar questions: Is John quick? Is Bill quick?

Step 3. Check if the first conjunct entails the positive answer to the first polar question: ✓

Step 4. Check if the second conjunct entails the negative answer to the second question: ✓

- J&Z: the conjuncts must be precise answers to the polar questions.
- Toosarvandani: the conjuncts must *entail* precise answers to the polar questions.
- **Novel evidence and insight:** This talk presents novel data suggesting that J&Z's condition is too strict, and Toosarvandani's condition is too weak.
- **Proposal:** The conjuncts must be doubly distinct answers that each *settles* a polar question contained in the QUD.
- A sentence *settles* the polar question iff it is a felicitous precise or over-informative answer.

Roadmap

- Section 2 shows that semantic opposition conjuncts can be over-informative answers, suggesting that J&Z's proposal is too strict.
- Section 3 shows that Toosarvandani would fail to rule out conjuncts that are infelicitous answers, suggesting that his condition is too relaxed. Then I show that the current proposal manages to rule out these sentences.
- Section 4 concludes the talk.

2. Conjuncts can be over-informative

- Compare (2a) with (9), whose second conjunct is an over-informative answer to the second polar question.

(9) Oleg bought a Ferrari, whereas Roma couldn't even find a car dealer.

J&Z would predict (9) to be bad, contrary to fact

(10) *J&Z's analysis of (9)*

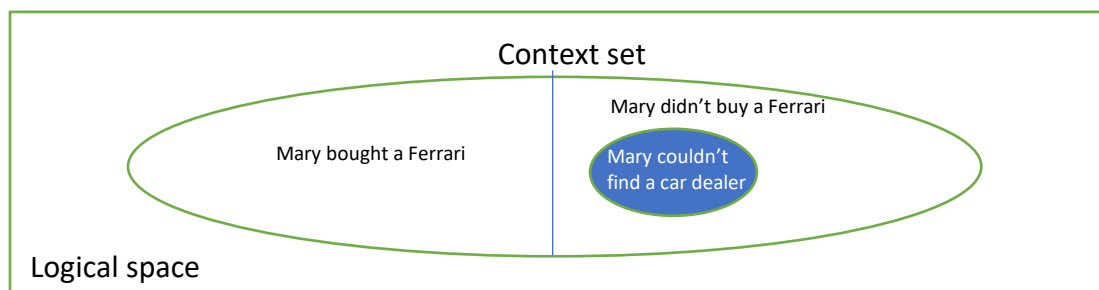
Oleg bought a Ferrari, whereas Roma couldn't even find a car dealer.

Step 1. Find a potential QUD: Who bought a Ferrari?

Step 2. Divide the QUD into two polar questions: Did Oleg buy a Ferrari? Did Roma buy a Ferrari?

Step 3. Check if the first conjunct is the positive precise answer to the first polar question: ✓

Step 4. Check if the second conjunct is the negative precise answer to the second question: X ❌



- In order to make sure that J&Z would predict (9) to be bad, we need to show that there is no QUD that could satisfy J&Z's condition. This is true, as there is no QUD where the conjuncts of (9) are precise answers to its polar questions.
- But (9) is felicitous, suggesting that the semantic opposition conjuncts don't need to be precise answers to the polar questions, but can be over-informative answers.

3. Conjuncts must settle the question

- New observation: in semantic opposition, a conjunct's presupposition cannot be the other conjunct's assertion.
- I illustrate this with a *pronoun* (11a), a *cleft* (11b), *after* (11c) and *stopped* (11d), which are all presupposition triggers.

- (11) a. #Oleg met someone who bought a Ferrari, whereas she (=the person Oleg met) didn't buy a Chevy.
 b. #It is Oleg who bought a Ferrari, whereas Roma didn't buy one.
 c. #Oleg went home after buying a Ferrari, whereas he didn't buy a Chevy.
 d. #Oleg stopped smoking cigarettes, whereas he didn't smoke cigars before.

Toosarvandani (2014) cannot account for the infelicity of (11a-d)

(12) *Toosarvandani's analysis of (11a)*

Oleg met someone who bought a Ferrari, whereas she (=the person Oleg met) didn't buy a Chevy.

Step 1. Find a potential QUD: Which car is x s.t. Oleg met someone who bought x?

Step 2. Divide the QUD into two polar questions: Did Oleg meet someone who bought a Ferrari? Did Oleg meet someone who bought a Chevy?

Step 3. Check if the first conjunct entails the positive answer to the first polar question: ✓

Step 4. Check if the second conjunct entails the negative answer to the second question: ✓❗

- By using a pronoun which refers to a definite DP, the second conjunct presupposes that Oleg only met one person, and asserts that that person didn't buy a Chevy. The second conjunct entails that Oleg didn't meet anyone who bought a Chevy.
- The conjuncts in (11a) satisfy Toosarvandani's condition, but (11a) is infelicitous.

The current proposal based on question settlement rules out (11a) correctly

- Although the second conjunct in (11a), (13A), entails the negative cell of the polar question, it is not a felicitous answer to the polar question (13Q).
- (13A) is not a felicitous answer because part of the answer to the question is in the presupposition of (13A) (i.e. Oleg met only one person), and presupposed material cannot address the question ((14), Heim 2015 lecture notes).

(13) Q: Did Oleg meet someone who bought a Chevy?

A: #The person he met didn't buy a Chevy.

(14) Q: Do you have children?

A: #I have to pick up my daughter now.

- To rule out (11a), the current analysis not only needs to show that the conjuncts do not settle the QUD in (12), but also that they don't settle *any* potential QUD.
- The other QUD that is promising and should be ruled out is *Which car did the person that Oleg met buy?*

(15) *My analysis of (11a)*

Oleg met someone who bought a Ferrari, whereas she (=the person Oleg met) didn't buy a Chevy.

Step 1. Find a potential QUD: Which car did the person that Oleg met buy?

Step 2. Divide the QUD into two polar questions: Did the person that Oleg met buy a Ferrari? Did the person that Oleg met buy a Chevy?

Step 3. Check if the first conjunct settles the first polar question: *X*

Step 4. Check if the second conjunct settles the second question: *✓*

- The first conjunct (16A) does not settle the first polar question (16Q).

(16)Q: Did the person that Oleg met buy a Ferrari?

A: #Oleg met someone who bought a Ferrari.

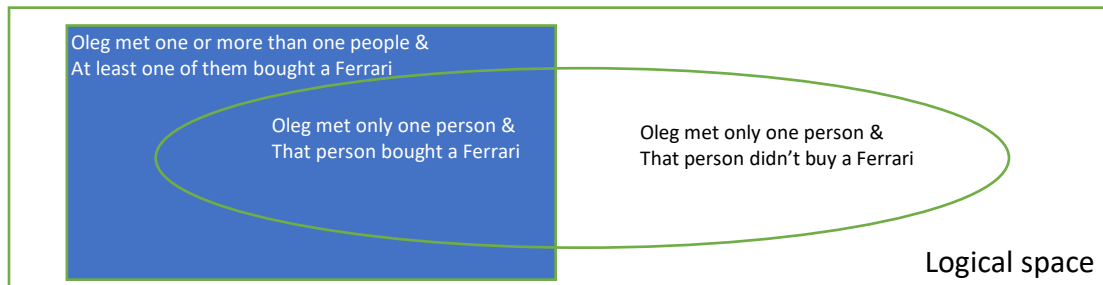
- (16A) is an odd answer to (16Q). It might be improved with a rise-fall-rise intonation (Constant 2012).

(17)Q: Did the person that Oleg met buy a Ferrari?

A: Oleg met someone who bought a Ferrari.

L*+H L- H%

- *Someone* creates an anti-presuppositional effect (Heim 1991; Marty 2017): by using *someone*, the answerer implies that they cannot use a definite DP, suggesting that they do not share the asker's belief that Oleg only met one person.
- With this intonation, the answerer suggests that they are changing the QUD to a different question *Did Oleg meet someone who bought a Ferrari?*
- As Figure 3 shows, (16A) selects the positive cell (i.e. Oleg met only one person, and that person bought a Ferrari) plus worlds that are not in the context set (i.e. Oleg met more than one person, and at least one of them bought a Ferrari), and thus fails to settle (16Q).



4. Conclusion and implications

- I have shown that the semantic opposition conjuncts can be over-informative answers to polar questions (suggesting that J&Z's condition is too strict), but they have to be felicitous answers that settle the questions (suggesting that Toosarvandani's condition is too relaxed).
- Literature on question pragmatics has proposed many different definitions of how well an answer may address a question (e.g. on-topichood by Lewis 1979; relevance and good-answerhood by Groenendijk & Stokhof 1984; informativeness, licensing and pertinence by Groenendijk 1999).
- My study provides evidence for the linguistic and cognitive reality of *question settlement*, by showing that the (im)possibility of semantic opposition coordination depends on whether the conjuncts settle the relevant question.
- New diagnostic of question pragmatics:

- Judgments in question pragmatics have traditionally relied on intuitions about question-answer pairs.
- I provide a diagnostic involving *whereas*- and *but*-coordination, declarative sentences that are nevertheless closely related to question-answering, adding to the growing literature that does so (e.g. AnderBois 2016).

References

- AnderBois, Scott. 2016. A QUD-based account of the discourse particle *naman* in Tagalog. *The 23rd Meeting of the Austronesian Formal Linguistics Association (AFLA 23)*. 20–34.
- Constant, Noah. 2012. English rise–fall–rise: a study in the semantics and pragmatics of intonation. *Linguistics and Philosophy* 35. 407–42.
- Groenendijk, Jeroen. 1999. The logic of interrogation: Classical version. *Semantics and Linguistics Theory* 9. 109–126.
- Groenendijk, Jeroen, and Martin Stokhof. 1984. Studies on the semantics of questions and the pragmatics of answers. PhD dissertation, Institute for Logic, Language & Computation (ILLC), University of Amsterdam.
- Heim, Irene. 1991. Artikel und definitheit [articles and definiteness]. *Semantik: Ein internationales Handbuch der Zeitgenössischen forschung*, 487–535.
- Hulstijn, Joris. 1997. Structured information states: Raising and Resolving Issues. In Anton Benz & Gerhard Jäger (eds.), *MunDial'97: Munich Workshop on Formal Semantics and Pragmatics of Dialogue, University of Munich, March 10–12, 1997, Proceedings (CIS-Berichte)*, 99–117. Centrum für Informations- und Sprachverarbeitung, University of Munich.
- Jäger, Gerhard. 1996. Only updates: On the dynamics of the focus particle *only*. *Amsterdam Colloquium* 10.
- Jasinskaja, Katja & Henk Zeevat. 2008. Explaining additive, adversative, and contrast marking in Russian and English. *Revue de Sémantique et Pragmatique* 24. 65–91.
- Jasinskaja, Katja, and Henk Zeevat. 2009. Explaining conjunction systems in Russian, English, and German. *Sinn und Bedeutung* 13. 231–245.
- Lewis, David. 1979. Scorekeeping in a language game. *Journal of Philosophical Logic* 8(1). 339–359. Reprinted in Bäuerle, Egli & von Stechow 1979: 172–187.
- Marty, Paul. 2017. Implicatures in the DP domain. PhD dissertation, MIT.
- Roberts, Craige. 1996/2012. Information structure: Towards an integrated formal theory of pragmatics. *Semantics and Pragmatics* 5(6). 1–69.
- Roberts, Craige. 2004. Context in dynamic interpretation. In Laurence R. Horn & Gregory Ward (eds.), *The handbook of pragmatics*, 197–220. Oxford: Blackwell.
- Stalnaker, Robert. 1978. Assertion. In Peter Cole (ed.), *Pragmatics (Syntax and Semantics 9)*. 315–332. New York, NY: Academic Press.
- Toosarvandani, Maziar. 2014. Contrast and the structure of discourse. *Semantics and Pragmatics* 7. 1–57.
- Winter, Yoad & Mori Rimón. 1994. Contrast and implication in natural language. *Journal of Semantics* 11(4). 365–406.