Oddness and Ignorance Inferences

Raj Singh, singhr@connect.carleton.ca*

June 5, 2010

1 A Puzzle

(1) a. #I have two or more sons
b. #If I'm married to an American, I have two sons

(2) a. John has two or more sons
b. If John is married to an American, he has two sons

- the oddness of various kinds of sentences, since Moore's paradox on, have motivated the introduction of various principles into semantic/pragmatic theory
- as far as I can tell, none of these principles apply to the contrast in (1) and (2)
- we will thus need to extend the current repertoire of principles motivated by oddness
- will try to make sense of this contrast by appealing to certain peculiar features of the *ignorance inferences* these sentences generate
- once we do this, we will see that this apparent complication to semantic/pragmatic theory will actually allow us to significantly simplify it

*Thanks to Kai von Fintel, Danny Fox, Irene Heim, Roni Katzir, Giorgio Magri, Bernhard Schwarz, Bob Stalnaker, and audiences at the Modularity Reading Group at MIT and MOSAIC 2 at McGill University.

- specifically, we will argue that our response to (1) and (2) allows us to derive the oddness of various sentences that motivated the stipulation of four separate principles: (i) A parsing principle due to Magri (2009) dictating that sentences *must* be parsed with an exhaustive operator, (ii) An oddness principle due to Magri (2009) positing that a sentence ϕ is odd if its meaning strengthened by scalar implicature, $[[exh(\phi)]]$, contradicts common knowledge, (iii) *Maximize Presupposition!* (Heim (1991), and much subsequent work), (iv) Hurford's Constraint (Hurford (1974), and much subsequent work)

- this derivation will only work, however, so long as we assume the existence of a covert exhaustive operator that can optionally be appended to sentences

- to the extent that this allows for the statement of a simpler overall theory than alternative formulations, in addition to simplifying the grammatical theory of implicature, it also argues for it

2 An Initial Proposal

- will begin by discussing some recent work on scalar implicature and oddness, and use it to motivate a response to (1) and (2)

2.1 Oddness and Scalar Implicatures

- why is the following sentence odd?

(3) #John gave the same grade to all of his students. He gave some of them an A.[1]

- Magri (2009) proposes that a sentence ϕ is odd if the strengthened meaning of ϕ (i.e., ϕ strengthened with its scalar implicatures) contradicts common knowledge

- assume with Magri (2009) (and much other work) that the SIs of sentence ϕ are computed by appending an exhaustive operator exh to ϕ

[1] See Schlenker (2006), Magri (2009), Singh (2009a) for discussion of such cases. See Magri (2009) for a wealth of related facts.

Magri's Oddness Principle If $c \cap exh(\phi) = \emptyset$, then ϕ is odd in context c.

- the first sentence establishes that John gave an A to some of his students iff he gave all of them an A
- an exh on the second sentence generates the SI that John didn't eat all of the cookies, that is, $[[exh(\exists)]] = \exists \wedge \neg\forall$
- under Magri's Oddness Principle, the result should be odd
- but why is (3) necessarily odd?
- since exh would seem to be optional, why not simply disambiguate the sentence in favour of the parse without exh?
- that is, why not parse the second sentence as $\exists$, rather than $exh(\exists)$, hence avoiding contradiction?
- Magri: SI computation is *obligatory*
- in an exhaustivity-based framework, this means that sentences must be parsed with an exhaustive operator

Magri's Parsing Principle Sentences must be parsed with an exh.

- in order to be consistent with the well-known observation that SIs can often be cancelled, such a framework would have to say that apparent cancellations are really just due to the stronger alternative not being relevant
- e.g., in the first sentence of (4), $\forall$ would not be a member of the alternatives relative to which SI computation takes place[2]

(4) John ate some of the cookies. In fact, he ate all of them.

- some evidence in favour of this idea is that, if we force $\forall$ to be relevant, 'cancellation' no longer seems to be possible

(5) A: How many of the cookies did John eat?
B: # He ate some of them. In fact, he ate all of them.

[2]In this way, so long as no other alternatives are considered, $[[exh(\exists)]] = [[\exists]]$.

- Magri (2009) and Fox and Katzir (2009) lay out assumptions that govern when an alternative can and cannot be pruned from the alternatives employed in SI computation
- crucially, these assumptions suffice to ensure that $\forall$ cannot be pruned in (3), but can in (4)[3]

2.2 Oddness and Ignorance Inferences

- let's return now to the contrast between (1) and (2), and use the previous section to guide us
- first, it can easily be shown that the results of that section do not help with respect to the puzzle, so something new will be required
- Observation: some sentences give rise not (only) to SIs, but (also) to ignorance inferences (I-INFs)
- e.g., disjunctions $\phi \vee \psi$, conditionals 'if ϕ, then ψ' predicted to generate (speaker) ignorance inferences about ϕ, ψ, that is, $\Diamond_S\phi$, $\Diamond_S\neg\phi$, $\Diamond_S\psi$, $\Diamond_S\neg\psi$ (e.g., Gazdar (1979))
- will write these as $I_S\phi$ (= the speaker is ignorant about ϕ), $I_S\psi$
- we might be able to make sense of the oddness of (1), and the lack of any oddness in (2), by extending to I-INFs the discussion about SIs from the previous section
- proposal: extend Magri's Oddness Principle to I-INFs as well
- let $[[\phi]]^+$ be the meaning of ϕ as strengthened with I-INFs

Proposal (First pass, to be revised in Section 4.1): I-INF Oddness Principle If $c \cap [[\phi]]^+ = \emptyset$, then ϕ is odd in context c

- this takes care of the contrast in (1) and (2)

[3]Assumption (from Magri (2009)): For contextually equivalent alternatives ϕ, ψ, ϕ is relevant iff ψ is relevant. Where ϕ (e.g., $\exists$ in (3)) is asserted, hence relevant, so is any contextually equivalent alternative (e.g., $\forall$ in (3)).

- in (1), the I-INFs that I don't know whether I'm married to an American, and that I don't know whether or not I have two sons, contradict the common knowledge that people know such personal facts
- such a contradiction is avoided in (2) (e.g., it is perfectly consistent for the speaker to not know anything about John's family)
- without the I-INF Oddness Principle, the contrast remains mysterious

3 An Immediate Consequence: Monotonicity

- at first blush, it would seem that standard proposals for I-INFs do not have room to accommodate the I-INF Oddness principle
- e.g., for Gazdar (1979), I-INFs are predicted to be *cancelled* when they stand in contradiction with c
- and while there is much debate over whether SIs are grammatical or pragmatic, all theories currently predict I-INFs to be pragmatic (e.g., Sauerland (2004), Fox (2007a)), hence one would expect that they should be cancellable
- if we are right, this cannot be
- that is, given that (1) is necessarily odd (given our common knowledge), if the I-INF Oddness Principle is to be operative, it must be that I-INFs are *mandatory*
- that is, sentence ϕ is necessarily interpreted as $[[\phi]]^+$

I-INFs are Mandatory Assertion of sentence ϕ in context c has the effect of updating c with (at least) $[[\phi]]^+$

- this means, among other things, that I-INFs should not be cancellable
- we saw above that conflicts with c cannot be avoided by cancelling I-INFs
- it seems that even overt attempts at cancellation fail (cf. (3)-(5) above)

(6) a. #John has two or more sons. In fact, he has three sons.

b. #If John is married to an American, he has two sons. In fact, he has two sons.

- what determines which propositions become I-INFs?
- we follow Fox (2007a)
- when ϕ is used in context c, there will be any number of *relevant* propositions $\mathcal{R} = \{r_1, \ldots, r_k\}$
- for those $r_i \in \mathcal{R}$ whose truth-value is left undetermined by $[[\phi]]$, we will get I-INF $I_S r_i$
- our modification to this is that this process cannot be cancelled[4]

4 Simplifying the Theory of Oddness

- our current I-INF Oddness Principle does not take ambiguities into account
- specifically, suppose that there is a systematic ambiguity (presence or absence of exh)
- call this assumption 'EXH'
- in Section 4.1, we provide a new, Generalized I-INF Oddness Principle (call this 'GIOP') that differs from the current I-INF Oddness Principle by taking the assumption EXH into account
- in conjunction with the obligatoriness of I-INFs (call this 'MON'), we will argue that GIOP, EXH and MON will allow us to eliminate various principles from the inventory of semantic/pragmatic theory

[4]For explicit statements concerning why disjunctions and conditionals give rise to I-INFs, see Gazdar (1979), Fox (2007a), Singh (2008a), Fox and Katzir (2009). Given our architecture, the only way an I-INF $I_S r_i$ can be avoided is if r_i can be pruned from the set of relevant propositions $\mathcal{R}$. Crucially, in disjunctions $\phi \vee \psi$ and conditionals 'if ϕ, then ψ,' there is no way to prune ϕ without also pruning ψ. In general, neither can be pruned outside of a restricted kind of context that is irrelevant to our present concerns. For more discussion, see Singh (2008a), Fox and Katzir (2009).

- in Section 4.1, after arguing against Magri's Parsing Principle, we will argue that GIOP, EXH and MON will allow us to derive the data that motivated Magri's Parsing Principle and Magri's Oddness Principle

- in Section 4.2, we will argue that GIOP, MON, EXH suffice to predict the data that motivated *Maximize Presupposition!*

- finally, in Section 4.3, we'll argue that GIOP, MON, EXH also allow us to derive the data that motivated Hurford's Constraint

- in sum, we will argue that GIOP, MON, EXH will allow us to avoid having to stipulate Magri's Parsing Principle, Magri's Oddness Principle, *Maximize Presupposition!* and Hurford's Constraint as primitives of semantic/pragmatic theory

4.1 Oddness and Parsing

- we currently have four principles in place: Magri's Oddness Principle, Magri's Parsing Principle, the I-INF Oddness Principle, and the principle that I-INF computation is mandatory

- I see no way to reduce these principles to one another

- however, note that if we also accept EXH, i.e., if we accept that not only is there a covert exhaustive operator exh, but also that it is truly *optional*, then we cannot at the same time maintain Magri's Parsing Principle

- I would like to suggest that there are reasons for calling Magri's Parsing Principle into doubt

- first, there continues to be much debate about what the proper disambiguation principles are, if any, in an exhaustivity based framework[5]

- part of this debate involves important questions about how to to generalize this principle to sentences containing multiple operators[6]

[5]See e.g., Chierchia (2004), Fox (2007a), Chierchia et al. (2008), Magri (2009), Chemla and Spector (2009), Chemla (2009b), Geurts and Pouscoulous (2009), Ippolito (2010), Sauerland (2010).

[6]For example, take a sentence like *Every boy ate some of the cookies.* Given that there are multiple sites at which exh could occur, what is the preferred parse? To help answer this question,

- more importantly, I think the principle makes incorrect predictions, in certain cases

(7) a. Context: High ranking generals are trying to figure out a plan of action. The following dialogue takes place:
A: Given all your evidence, do we know whether every soldier has read Manual A?
B: No sir. There is no way to answer this at the moment.
A: So what do we know?
B: Every soldier has read Manual A or Manual B. More information will be needed before we can send them, sir.

b. Context: There is an interracial marriage ceremony. Lyle and Bernie are friends of the groom. The party is being hosted by the unwashed brutes on the other side. There are specific eating rituals. On the table is some cake, ice-cream, and cookies.
Lyle: Man, that cake looks terrible. I hope we don't have to eat it. Do you know whether eating the cake is required?
Bernie: Not sure. We should probably ask Elvis. (I know that) we're required to eat (either) the cake or the ice-cream. Let me call Elvis now to make sure.

- consider (7a)
- it is fairly clear that we get two I-INFs from this sentence, namely, that the speaker is ignorant about whether every soldier has read Manual A, and is ignorant about whether every soldier has read Manual B[7]
- this means that they are both alternatives to the asserted sentence

it would be desirable if some motivation could be given for the principle. For example, if some version of the strongest meaning hypothesis were behind it, we might expect to find *every boy x, exh (x ate some of the cookies)* as preferred. Alternatively, one might imagine motivating the principle by the idea that sentences are always answers to questions, hence exhaustified. We might then expect matrix exh to be preferred, or possibly even getting different parsing preferences depending on some assumed formulation of question-answer relations.

[7]This is also asserted about Manual A. However, as far as I can tell, for any complex sentence T embedding disjunction $\phi \vee \psi$, $T(\phi \vee \psi)$, for any simplification operation on T (cf. Katzir (2007b)) leading to alternatives $S(\phi)$, $S(\psi)$, $S(\phi)$ can be pruned if and only $S(\psi)$ can be pruned. That is, as far as I know, $S(\phi)$ will be an SI/I-INF iff $S(\psi)$ will be an SI/I-INF.

- if Magri's Parsing Principle were correct, we would expect to get SIs that not every soldier has read Manual A, and that not every soldier has read Manual B
- we don't, in fact, get these SIs
- note also that if we did, the sentence would also be expected to be odd (given Magri's Oddness Principle), since the SI that not every soldier has read Manual A would contradict B's answer to A's first question
- but there is no oddness to the sentence
- all we get are I-INFs, which, in this context, do not contradict the context
- this would be expected if (7a) were allowed to be parsed without an exh (either matrix or embedded, both of which would end up contradicting c)
- similar remarks apply (*mutatis mutandis*) to (7b) with respect to the alternatives 'we're required to eat the cake,' 'we're required to eat the ice-cream'
- if this is correct, then Magri's Parsing Principle will have to be rethought
- this, in turn, means that Magri's Oddness Principle may also have to be revised, since it depends on the parsing principle in order to apply to cases like (3)
- what I'd like to suggest here, instead, is that if we accept that the ambiguity is genuine, i.e., if we accept EXH, then we can state a generalized version of the I-INF Oddness Principle that will allow us to capture the data that motivated Magri's Parsing Principle and Magri's Oddness Principle without having to reference them at all

Generalized I-INF Oddness Principle Suppose sentence ϕ is n-ways ambiguous, yielding parses $\{\phi_1, \ldots, \phi_n\}$.[8] If every parse ϕ_i of ϕ is such that $[[\phi_i]]^+ \cap c = \emptyset$, then ϕ is odd in context c.

- let's see how this captures the oddness of (1) and, crucially, also (3), without appealing to Magri's Parsing Principle

[8]The generalization to n-ways ambiguity is required for sentences containing multiple operators. This will be important when we turn to Hurford's Constraint and embedded exhaustification in Section 4.3.

- each sentence is two-ways ambiguous (presence or absence of exh)

(8) #If I'm married to an American, I have two sons = 'if A, then B'[9]

a. $[[if \text{A}, then \text{B}]]^+ = (A \rightarrow B) \wedge I_S A \wedge I_S B$
These I-INFs contradict the common knowledge that the speaker knows the makeup of her family.

b. $[[exh(if \text{A}, then \text{B})]]^+ = (A \rightarrow B) \wedge I_S A \wedge I_S B$
Exhaustification (in this case) does not change the meaning,[10] and we get the same I-INFs, hence again ending in contradiction.

- from EXH we get two parses
- from MON we get (the same) mandatory I-INFs for each
- since each sentence strengthened with its I-INFs ends up contradicting c, by GIOP the sentence is odd

(9) John gave the same grade to all his students. He gave some of them an A.

a. $[[exh(\exists)]]^+ = \exists \wedge \neg\forall$[11]
Adding this information to c would result in contradiction, since it is common knowledge (as established by the first sentence) that John gave some of his students an A iff he gave them all an A.

b. $[[\exists]]^+ = \exists \wedge I_S\forall$
Again, adding this information to c would result in contradiction, since it is common knowledge (hence speaker knowledge) that John gave some of his students an A iff he gave all of them an A.

- again, from EXH, we get two parses
- recall that the alternatives are $\{\exists, \forall\}$
- from MON, we get mandatory I-INFs (for each alternative whose truth-value is left undetermined by the parse)
- in (a), the meaning is $\exists \wedge \neg\forall$, hence the mandatory I-INF computation under MON ends up being vacuous in this case

[9] We'll turn to disjunctions in Section 4.3.
[10] See Singh (2008a).
[11] Assuming the alternatives are (necessarily, in this context) $\{\exists, \forall\}$. See Footnote 3.

- in (b), by MON, we get the I-INF $I_S\forall$
- in each case, the result contradicts common knowledge
- hence, by GIOP, the result is odd
- hence, we see that EXH, GIOP, and MON suffice to capture not only the data we started with, but also the data that motivated Magri's Oddness Principle and Magri's Parsing Principle

4.2 Oddness and *Maximize Presupposition!*

- Observation (Hawkins (1991), Heim (1991)): Non-presuppositional sentences are odd when they are contextually equivalent to certain presuppositional sentences

(10) a. #A sun is shining (contextually equivalent to *the sun is shining*)
b. #All of John's eyes are blue (contextually equivalent to *Both of John's eyes are blue*)

- Heim (1991) proposed a competition principle, *Maximize Presupposition!*, to account for the oddness of these sentences
- very roughly, certain sentences 'compete' for the expression of meaning, and when these competitors are contextually equivalent, but one of them has presuppositions that are met in the context of use, the presuppositional one must be used

Maximize Presupposition! If ϕ, ψ are contextually equivalent competitors, and ψ carries stronger presuppositions that are met in c, then ψ must be used

- Question: Where does this principle come from? How to motivate? Does not follow from Gricean considerations (e.g., Heim (1991), Percus (2006), and much other work)
- nevertheless, Schlenker (2006), Magri (2009), Singh (2009a) try to argue that MP can be derived from the theory of implicature

- specifically, Magri (2009) and Singh (2009a) (following Magri (2009)) argue that if SIs are computed without regard to common knowledge (say, by use of an exhaustive operator in the syntax), then the oddness can be reduced to Magri's Oddness Principle[12]
- problem: rests on Magri's Parsing Principle
- with GIOP, EXH, and MON in place, can show that the oddness remains no matter how the sentence is parsed
- suppose that *the X Y* $\equiv p \wedge$ (*A(n) X Y*), where p is whatever the right presupposition of *the X Y* happens to be (say, that there's exactly one X)

(11) #A sun is shining (= A)

a. $[[exh(A)]]^+ = A \wedge \neg p$[13]
This contradicts the common knowledge that p (e.g., that there is exactly one sun)

b. $[[A]]^+ = A \wedge I_S p$
Again, this contradicts the common knowledge that p.

- thus, the facts can be captured without having to stipulate *Maximize Presupposition!* as primitive[14]

4.3 Oddness and Hurford's Constraint

- Hurford's Constraint (Hurford (1974)): A disjunction $\phi \vee \psi$ is odd if one of the disjuncts entails the other

(12) a. #John was born in Paris or France
b. #John is a man or a bachelor

[12] There are certain differences in the proposals, but these are immaterial for the current discussion.

[13] From *A(n) X Y* $\wedge\neg$ *The X Y* $\equiv exh$(A(n) X Y).

[14] I believe the result can be extended to capture some further difficulties for attempts at deriving MP from implicature type reasoning, such as the existence of MP effects under negation (e.g., Sauerland (2008)), as well as for certain difficulties in the statement of MP itself, such as the existence of MP effects even when the competing sentence is itself presuppositionless (e.g., Percus (2006), Singh (2008a), Singh (2009b)), but this would require the introduction of certain (independently motivated) assumptions that would take us too far afield at this point.

- HC has been used to argue for the existence of embedded SIs (e.g., Fox (2006), Fox (2007b), Chierchia et al. (2008), Fox and Spector (2008), Singh (2008b), Singh (2008a))

(13) a. John ate some or all of the cookies
b. (John will call Mary or Sue) or (He'll call both Mary and Sue)

- these disjunctions stand in the required Hurford configuration, but there is no sense of oddness to them (Gazdar (1979))
- can make sense of this fact if there's an embedded exh
- embedded exhaustification obviates HC

(14) a. #$(\exists \vee \forall)$ (violation of HC)
b. $(exh(\exists) \vee \forall)$ (avoids HC)

(15) a. #$((A \vee B) \vee (A \wedge B))$ (violation of HC)
b. $((exh(A \vee B)) \vee (A \wedge B))$ (avoids HC)

- while HC seems to teach us that embedded SIs exist, HC itself has had to be stipulated as a primitive[15]
- how do we motivate such a contraint?
- it turns out that the data that motivated HC are predicted by our existing principles, hence obviating the need to stipulate HC as a primitive
- to see this, it should suffice to derive the contrast between (11a) and (12a)

(16) #John was born in France or Paris = $F \vee P$
$[[F \vee P]]^+ = (F \vee P) \wedge I_S F \wedge I_S P$
Once this information gets added to c, it becomes common knowledge that John was born in France (by the asserted content), which entails that the speaker knows that John was born in France. This in turn contradicts the I-INF $I_S F$.[16]

[15]Though see Simons (2000), Katzir (2007a), and Chemla (2009a) for attempts at pragmatic derivations of the constraint. See Singh (2008a) and Fox and Spector (2008) for arguments that exhaustification is crucial.

[16]It is fairly straightforward to show that no amount of exhaustification can help avoid contradiction. The crucial case is $exh(F) \vee P$. See Singh (2008b) for why adding an embedded exh on F will not help.

(17) John ate some or all of the cookies

a. $[[\exists \vee \forall]]^+ = \exists \wedge I_S \exists \wedge I_S \forall$
Once this gets added to c, it is common knowledge that $\exists$ (by the asserted content), which entails $\Box_S \exists$, which contradicts the I-INF $I_S \exists$.

b. $[[exh(\exists) \vee \forall]]^+ = \exists \wedge I_S(\exists \wedge \neg\forall) \wedge I_S \forall$
In this case note that there is no longer any contradiction between what is asserted and the I-INFs. Since nothing in c results in a contradiction between the speaker knowing that John ate (at least) some of the cookies, but being ignorant about whether he ate only some or all of them, the sentence escapes the Generalized I-INF Oddness Principle. The way to get it back, of course, is to add some common knowledge that would result in a contradiction, as in (c).

c. #John gave the same grade to all his students. He gave some or all of them an A.

A List of Assumptions

Exhaustive Operator (EXH) Natural languages contain a covert exhaustive operator that can be optionally appended to sentences
I-INFs are Mandatory (MON) When sentence ϕ is asserted in context c, what gets added to c entails $[[\phi]]^+$
Generalized I-INF Oddness Principle (GIOP) If every parse ϕ_i of sentence ϕ is such that $[[\phi_i]]^+ \cap c = \emptyset$, then ϕ is odd in context c.

References

Emmanuel Chemla. Similarity: Towards a unified account of scalar implicatures, free choice permission, and presupposition projection. Under Revision for *Semantics and Pragmatics*, 2009a.

Emmanuel Chemla. Universal implicatures and free choice effects: Experimental data. *Semantics and Pragmatics*, 2:1–33, 2009b.

Emmanuel Chemla and Benjamin Spector. Experimental evidence for embedded scalar implicatures. Under revision for *Journal of Semantics*, 2009.

Gennaro Chierchia. Scalar implicatures, polarity phenomena, and the syntax-pragmatics interface. In A. Belleti, editor, *Structures and Beyond*. Oxford University Press, Oxford, 2004.

Gennaro Chierchia, Danny Fox, and Benjamin Spector. The grammatical view of scalar implicatures and the relationship between semantics and pragmatics. In Paul Portner, Claudia Maienborn, and Klaus von Heusinger, editors, *Handbook of Semantics*. Mouton de Gruyter, New York, NY, 2008.

Danny Fox. Scalar implicatures: Pragmatics or grammar or both. Lecture Notes, 24.959: Topics in Semantics, MIT, 2006.

Danny Fox. Free choice disjunction and the theory of scalar implicature. In Uli Sauerland and Penka Stateva, editors, *Presupposition and Implicature in Compositional Semantics*, pages 71–120. Palgrave Macmillan, New York, NY, 2007a.

Danny Fox. Too many alternatives: Density, symmetry, and other predicaments. *Proceedings of SALT 17*, 2007b.

Danny Fox and Roni Katzir. On the characterization of alternatives. Under revision for *Natural Language Semantics*, 2009.

Danny Fox and Benjamin Spector. Economy and embedded exhaustification. Handout, MIT and Harvard University/ENS, 2008.

Gerald Gazdar. *Pragmatics*. Academic Press, New York, NY, 1979.

Bart Geurts and Nausicaa Pouscoulous. Embedded implicatures?!? *Semantics and Pragmatics*, 2:1–34, 2009.

John A. Hawkins. On (in)definite articles: implicatures and (un)grammaticality prediction. *Journal of Linguistics*, 27:405–442, 1991.

Irene Heim. Artikel und definitheit. In *Semantics: An International Handbook of Contemporary Research*. de Gruyter, Berlin, 1991.

James Hurford. Exclusive or inclusive disjunction. *Foundations of Language*, 11: 409–411, 1974.

Michela Ippolito. Embedded implicatures? Remarks on the debate between globalist and localist theories. *Semantics and Pragmatics*, 3:1–15, 2010.

Roni Katzir. Structural complexity and the computation of scalar implicature. Handout of Talk Presented at the ENS in Paris, France, at the MIT-Paris Workshop on Presupposition and Implicature, 2007a.

Roni Katzir. Structurally defined alternatives. *Linguistics and Philosophy*, 30: 669–690, 2007b.

Giorgio Magri. A theory of individual level predicates based on blind mandatory scalar implicatures. *Natural Language Semantics*, 17:245–297, 2009.

Orin Percus. Antipresuppositions. In Ayumi Uyema, editor, *Theoretical and Empirical Studies of Reference and Anaphora: Toward the Establishment of Generative Grammar as an Empiricial Science*, pages 52–73. Report of the Grant-in-Aid for Scientific Research (B), Project No. 15320052, Japan Society for the Promotion of Science, 2006.

Uli Sauerland. Scalar implicatures in complex sentences. *Linguistics and Philosophy*, 27:367–391, 2004.

Uli Sauerland. Implicated presuppositions. In A. Steube, editor, *Sentence and Context: Language, Context, and Cognition*. 2008.

Uli Sauerland. Embedded implicatures and experimental constraints: A reply to Geurts & Pouscoulous and Chemla. *Semantics and Pragmatics*, 3:1–13, 2010.

Philippe Schlenker. Maximize presupposition and gricean reasoning. Manuscript, UCLA and Institute Jean-Nicod, Paris, 2006.

Mandy Simons. *Issues in the Semantics and Pragmatics of Disjunction*. Garland, New York, NY, 2000.

Raj Singh. Modularity and locality in interpretation. Doctoral Dissertation, MIT, 2008a.

Raj Singh. On the interpretation of disjunction: Asymmetric, incremental, and eager for inconsistency. *Linguistics and Philosophy*, 31:245–260, 2008b.

Raj Singh. *Maximize Presupposition!* and informationally encapsulated implicatures. In Arndt Riester and Torgrim Solstad, editors, *Proceedings of* Sinn und Bedeutung 13, pages 513–526. 2009a.

Raj Singh. *Maximize Presupposition!* and local contexts. Under revision for *Natural Language Semantics*, 2009b.