Minimal Semantics and Neo-Gricean Pragmatics: Two Sides of the Same (Theoretical) Coin

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Introduction

Emma Borg's Minimal Semantics and Laurence Horn's Neo-Gricean Pragmatics are two approaches operating within the spirited debate over how and where to draw the line between pragmatic and semantic content. Because of their similarities in fundamental theoretical assumptions, the two approaches are generally thought to be the semantic and pragmatic counterparts to a unitary theory of language. Indeed, when viewed within the entire field of semantic/pragmatic theories the two approaches occupy a relatively small and proximate piece of theoretical ground. While Horn and Borg are often in conversation with the same interlocutors, they have not been in direct dialogue themselves; nor have others put them into conversation. This essay is an attempt to fill this gap in the literature through the provision of a systematic comparison of the two approaches. I will argue that not only can harmony between the two theories be established, but that a commitment to a Neo-Gricean pragmatic system\(^1\) indeed necessitates commitment to a semantic theory akin to that argued for by Minimal Semanticists. I will begin with a discussion of Grice's relevant work, followed by an overview of Minimalism and Neo-Griceanism and a discussion of their similarities with and departures from Grice's theory. The remainder of the essay will be concerned with establishing a rapprochement between the two theories through the identification and resolution of their inconsistencies.

H.P. Grice and Gricean Pragmatics

The following section will provide a description of the main points of the Gricean system with which much of the subsequent discussion will be directly or indirectly concerned. There are several reasons why it is important that these foundational assumptions be understood before

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\(^1\) While resisting engagement in a “more-Gricean-than-thou jousting match,” as Horn aptly puts it, I will use the Neo-Gricean label here to refer to Horn's positions at the exclusion of other ostensible Neo-Griceans such as Stephen Levinson. One can also see Elizabeth Closs Traugott's writings for Neo-Gricean arguments along the lines of Horn's works.
launching into a direct discussion and comparison of Neo-Gricean pragmatics and Minimal Semantics. First, and most obvious, Neo-Gricean theory owes its core theoretical assumptions and approach to Grice's original work. Second, Gricean theory will provide the basic theoretical assumptions about how language works that are common to both Neo-Gricean theory and Minimal Semantics. Lastly, the section will focus the scope of the paper by introducing the concepts to be discussed and by excluding alternative theories of language with which we will not be concerned.

To Mean Naturally or to Mean Non-Naturally

H. Paul Grice, the founder of the eponymous pragmatic theory, established several fundamental distinctions that continue to distinguish the Gricean program from other theories of language use. One distinction is that between natural and non-natural meaning, introduced by Grice in his 1957 essay Meaning. The distinction is an updated and refined version of the distinction pragmatists had made between “natural” and “conventional” signs. Grice convincingly argues that his formulation is an improvement upon the earlier approach because “some things which can [non-naturally mean] something are not signs (e.g. words are not), and some are not conventional in any ordinary sense (e.g., certain gestures); while some things which mean naturally are not signs of what they mean” (1957: 379). Obviating the need to speak of language in terms of 'signs', Grice separates his theory from the semiotic approach advocated by pragmatists such as Charles Sanders Peirce.

The focus of Meaning is the explication of what is entailed by an utterance\(^2\) that non-naturally means something. Grice begins by rejecting causation theories of meaning because

\(^2\) By 'utterance' I mean any well-formed sentence written or spoken in a particular context.
such theories fail to account for the fact that what a particular speaker (non-naturally\(^3\)) means by a token utterance of a particular word may diverge from the standard meaning of the word (ibid.: 381). This objection is fundamental to the Gricean program. It establishes the principles that what is meant by an utterance is dependent upon some specifics of the token of utterance and the speaker and that what is meant by an utterance may deviate from some established 'standard' meaning of the words uttered. Grice ultimately settles on the formulation “A non-naturally means something by x” is roughly equivalent to “A intends the utterance of x to produce some effect in an audience by means of the recognition of this intention” (ibid.: 385).\(^4\) This formulation is later qualified by Grice's Cooperative Principle: Make your conversational contribution such as is required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged (1975: 45). Without the Cooperative Principle Grice's theory of meaning is incomplete: it is the assumption that speakers are generally cooperative that allows one to base meaning off of reciprocally understood intentionality.

**Do You Mean What You Say?: Conventionality and What is Said**

Another foundational distinction of the Gricean program is that between what is said and what is communicated. What is 'said' Grice intends to be “closely related to the conventional meaning of the words (the sentence)...uttered” (1975: 44). Grice separates said content into two parts. One part is available via knowledge of the language spoken, “Given a knowledge of the English language, but no knowledge of the circumstances of the utterance, one would know something about what the speaker had said” (ibid.). This knowledge consists of comprehension and competency of the lexical meanings, syntax, and morphology of the language. The second

\(^3\) Going forward all instances of “mean” indicate non-natural meaning unless otherwise noted.
\(^4\) Note the implicit restriction in this formulation that only actors capable of intention can mean something. Additionally, the formulation does not account for unintended meaning.
part, which may be necessary “for a full identification of what the speaker had said” is available via the contributions of the context of utterance which are necessary to achieve disambiguation and establish the references of deictic terms (ibid.). These include sense disambiguations and the identification of deictic properties such as time, referent, and tense. How these contributions of context are triggered is an important point that is not discussed by Grice, but will be discussed in this paper. It is important to emphasize at this point, however, that only these contributions of context mentioned are given by Grice to play a role in what is said by an utterance.

The link between conventionality and what is said by an utterance is found in the first part of 'said' content discussed above. Indeed, this first part of the content – that which is recoverable via a hearer's knowledge of the spoken language independently of contextual contributions – is the content that is being discussed when we speak of the conventional meaning of words. It is because of the second part of 'said' content discussed above that Grice must maintain that what is said is “closely related,” and not synonymous, to the conventional meaning of the words. Conventional meaning and what is said cannot be synonymous because what is said includes the contextual contributions necessary for disambiguations and reference identification – processes which are not part of the conventional meanings of the words with which they are associated. Because conventional meaning is independent of contextual influences, it is also independent of token occurrences of utterances of the lexical item carrying that meaning.\(^5\) Simply put, the conventional meaning of a given word remains constant across single occurrences of its use. It follows in turn that Grice's non-natural meaning as outlined above is not conventional meaning, as the intentional nature of non-natural meaning entails its

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\(^5\) The emphasis here is on the independence of conventional meaning from tokens of use. Importantly, this does not mean that conventional meaning is independent of use overall. Instead, conventional meaning is conventional in the sense that it is reliant upon the uses and practices of the language community in which it is used. Conventional meaning of a lexical item is thus not ossified, in the sense of never changing, but it is a constancy of meaning against which aberrant uses could be identified.
sensitivity to token occurrences of use. Grice's system, therefore, is concerned with these two distinct types of meaning: conventional meaning and non-natural meaning. Conventional meaning corresponds closely with the content of what is 'said'; it is this idea of what is said that will concern us most in the sections that follow. Non-natural meaning we will say corresponds closely with what is 'communicated' by a given utterance.

The distinction between what is said and what is meant by an utterance raises the question of what is contained in between: how does one get from said content to communicated content? To fill this gap Grice introduces the term 'implicature'. Grice's 'implicature' is a technical word created as an umbrella term encompassing the related verbs for which it is intended to be used (e.g. 'implied', 'suggested', etc. (Grice 1975)). What is 'said' together with what is 'implicated' in an utterance yield what is 'communicated' by the utterance, though one or more of these elements may be missing in a given utterance (ibid.). We now have the three basic elements of a given utterance: what is said, what is implicated, and what is communicated. The category of implicatures then breaks down into two basic types: conventional implicatures and conversational implicatures. Conventional implicatures are implicatures that are determined by the conventional meaning of the word that carries the implicature. Conversational implicatures bifurcate into generalized conversational implicatures and particularized conversational implicatures. Particularized conversational implicatures are implicatures that are carried by the use of a certain form of words by virtue of the presence of special features of the context, while generalized conversational implicatures are implicatures that are carried by the use of a certain

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6 This is not to say that there is no relationship between conventional meaning and non-natural meaning in a given utterance. This relationship will be examined further below.
7 See Grice 1975 for a proposal of tests for differentiating conversational from conventional implicatures. See further discussion and proposed modification of this list in Sadock 1978 and Horn 1991.
8 Grice's program does leave room for the possibility of implicita that are non-conventional yet not conversational (see Horn 1992 page165 for a nice schema of the program). However, as these are not discussed in any detail by Grice or in the literature, I will leave the possibility aside.
form of words *unless* there are present special circumstances of context (ibid.: 56).

**The Simple Truth (Conditions)**

Much of the following discussion will be concerned with the truth-conditional content of sentences. What elements of an utterance (or sentence) should be truth-conditional and how to determine what counts as that truth-conditional content are important and controversial questions within the literature. Grice's position on truth-conditional content is perspicuously laid out in his discussion of implicatures. He states that “the truth of a conversational implicatum is not required by the truth of what is said (what is said may be true – what is implicated may be false)” (1975: 58). Thus, while conversational implicatures may have truth-conditions of their own, they are *not* included in the truth-conditions of what is said by an utterance. It thus follows that conversational implicatures are not carried by what is 'said', they are carried “by the saying of what is said” (ibid.: 58). Put plainly, sentences do not implicate, *speakers* do (by the flouting of conversational maxims, the words chosen to express an idea, etc.). Once this property of implicatures is understood it is clear that the truth-conditional content of a sentence consists of what is 'said', in Grice's technical sense of 'said'. Therefore, the truth-value of any given utterance is determined only by the conventional meaning of words it contains relativized to context of utterance in the restricted ways described above.

The existence of conventional implicatures would seem to complicate the story given thus far. After all, conventional implicatures by definition come about in cases in which the conventional meaning of a word determines what is implicated as well as determines what is said (ibid.). Grice uses the following example to illustrate, “He is an Englishman; he is, therefore,

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9 To dispel any possible confusion: we are interested here in the truth-conditions of what is said, not what is communicated. The truth-evaluable content with which we are concerned then is *semantic* content, not pragmatic.
brave.” The adverb “therefore” is the word that carries the conventional implicature; the consequential sense of the conventional meaning of 'therefore' implies that being brave follows from being English. However, Grice rejects the idea that a person who utters this sentence has said – in Grice's technical sense – that being brave follows consequentially from being English. He rejects this idea because in a case in which the consequential relationship were not to hold, the utterance is not strictly speaking false (ibid.: 45). The consequential implication carried by the word 'therefore' is thus not (strictly speaking) truth-conditionally relevant to the sentence. In this way Grice is able to maintain the truth-conditional irrelevancy of implicatures even in cases of conventional implicature. The existential status of conventional implicatures is highly contested within the literature; therefore, the remaining discussion of implicatures will center around conversational implicatures.  

Laurence Horn and Neo-Gricean Pragmatics

Laurence Horn's program is a direct descendent of Grice's work in developing a pragmatic theory of language. Horn, unlike other theorists who purport their work to be equally descended from Gricean theory, has adopted the fundamental principles of the Gricean pragmatic system described above. One of these principles is the maintenance of a clear distinction between syntactically constrained truth-conditional semantic content – which he follows Grice in calling “what is said” – and the pragmatic content of implicatures and speaker intentions which communicates speaker meaning.

10 I will not discuss the debate over the status of conventional implicatures. See Borg 2009 and Horn 2008 for comments on the uncertainty of conventional implicatures in the literature, Stalnaker 1974 for an influential argument that conventional implicatures should be viewed as pragmatic presuppositions, and Bach 1999 for arguments that what are historically labelled as conventional implicatures are actually instances of other phenomena.

11 Mainly Stephen Levinson, Dan Sperber & Deirdre Wilson, and Robyn Carston; their respective divergences are discussed below.
A principal contribution of Horn's, stemming from the Gricean division of semantic and pragmatic content, is his treatment of scalar implicatures. His organization of certain terms along a pattern of rightward entailment are nicknamed 'Horn Scales'. Horn scales arise when words that form a particular scale of degree can implicate, via Grice's Quantity Maxim, by the utterance of one item whether other items on the scale are not true. The logic of the formulation is that speakers, adhering to Grice's Conversational Maxims, will choose the strongest and most informative word to describe a situation that they truthfully can. Therefore, by using a less-informative or weaker word – e.g. warm – the speaker Q-implicates that the stronger words on that particular scale – e.g. hot, scalding – are not true or are not true to the speaker's knowledge.

The importance of Horn's scalar implicature theory, for our purposes here, is that scalar implicatures facilitate the clear separation of semantic, truth-conditional content and pragmatic content that is characteristic of the Gricean and Neo-Gricean programs. By organizing scalar terms so that they are lower-bounded by meaning and upper-bounded by implicature, Horn's theory provides, among other things, an explanation for a question that originally interested Grice – why English language equivalents of logical operators can be truth-conditionally identical to their logical counterparts while their meaning and usage in communicated speech can diverge.

Minimal Semantics

Minimal Semantics, as outlined by Borg (2004; forthcoming), is a moderate formal semantic

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12 Horn's condensation of Grice's original Conversational Maxims: Q Principle maxims: Make your contribution as informative as is required for the current purposes of the exchange (Quantity); Avoid obscurity of expression, Avoid Ambiguity (Manner).  
R Principle maxims: Do not make your contribution more informative than is required (Quantity); Be relevant (Relation); Be brief, Be orderly (Manner).  
(Grice 1975)

13 For a more in-depth description of scalars than I have space to provide here see Horn 2004 (and others).
theory that provides a Fodorian modular explanation of semantic meaning. In Borg's picture, the recovery and grasp of semantic (literal) meaning is based in a discrete cognitive module akin to those involved in the modular processes of the mind originally postulated in detail by Jerry Fodor (1983). Modules, summarily stated, encapsulate particular cognitive processes from the influence of other cognitive processes. Minimalism postulates the existence of a semantics module within which computational cognitive processes operate over syntactic and semantic information to deliver semantic content free of pragmatic contributions.\footnote{For a detailed defense of why the language faculty fits with a modular picture of cognitive processing, see Borg 2004, Chapter 2.} A language speaker's recovery of semantic meaning, therefore, appeals only to computational, non-abductive processes. This recovery is illustrated by a speaker's ability to grasp the literal meaning of a sentence in her language without appeal to any abductive processes such as the intentions of the person who uttered the sentence.

A consequence of this modular picture, in which semantic content is tractable and computationally recoverable, is that semantic content runs via and is fully realized by syntactic content. Minimalism thus offers a sharp distinction between semantic content, which is syntactically constrained, and pragmatic content, which is recoverable via abductive, unencapsulated processes that can appeal to, in principle, anything which a language speaker may know or deem relevant in a particular exchange. These two principles, that semantic content is fully realized by syntactic content and is recoverable without any appeal to pragmatic processes, form two of the four main commitments of the theory of Minimalism advocated in this paper.

Another principal commitment of Minimalism is that there are a limited number of context-sensitive semantic expressions in language. In a strong formal semantic approach
semantic content can *never* appeal to context of utterance.\textsuperscript{15} At first glance, this may appear analogous to what I was advocating in the discussion of modularity. However, with further exploration we see that a complete divorce of the recovery of semantic content from the context of utterance is unworkable. For example, consider the use of demonstratives and indexicals in language. The use of an indexical such as 'you' clearly appeals to some contextual features of the context in which it is uttered in order to establish the referent. Without an appeal to some pragmatic feature of the context of utterance the referent of the term cannot be established, and without establishment of the referent the sentence is not truth-evaluable. Thus, given that referent establishment is part of truth-conditional content, which to my knowledge is not a point challenged in the literature, the strong formal approach precludes the semantics of a sentence with an indexical from reaching propositional content.

Why, we can now ask, is the preclusion of a sentence with an indexical from being truth-evaluable a problem? I will adopt Borg's (forthcoming) arguments along three lines. First, once a minimalist accepts that semantic content need not be truth-evaluable, propositional content, it is unclear why she continues to argue that *prima facie* examples of sub-propositional content, such as “Tipper is ready,” do express propositions.\textsuperscript{16} But, Minimalists' claim that such sentences do indeed deliver propositional content is one of the principal points over which Minimalism departs from competing theories, such as Relevance Theory, which claim that such examples fail to reach propositional content. This claim leads to the second point, which is that once a Minimalist rejects the principle that all well-formed sentences express propositions it becomes difficult to maintain a distinction between the minimalist view and a view such as contextualism.

\textsuperscript{15} Because an appeal to context of utterance to determine truth-evaluable semantic content is an admittance that such content cannot be determined completely independently of pragmatics.

\textsuperscript{16} The counter position would be that a well-formed sentence such as “Tipper is ready” is not truth-evaluable without additional pragmatically supplied content, e.g. [to go swimming]. This pragmatic content corresponds with Bach's 'implicature' and Relevance Theorists' 'explicature'.
which holds that there is a context-invariant part of sentence meaning that does not always reach propositional meaning (Borg 2011: 4).

Third, Minimalists who continue to maintain that such examples are propositional (Cappelen and Lepore 2005) must offer some systematic explanation as to in which circumstances they would accept sub-propositional content of well-formed sentences and in which circumstances they would reject it. There is, however, no established criterion in the literature – of Minimalists or other theorists – for determining which sentences express propositions and which do not. In lieu of such a criterion one must argue either that all well-formed sentences express propositions or that none do, or risk falling prey to a methodologically unstable categorization of sentences based on speaker 'feelings' of completeness. To arbitrarily choose which sentences count as complete and which do not based on appeal to speaker intuitions lacks the methodological rigor to which a semantic theory should strive. Because some well-formed sentences uncontroversially do express propositions, and because of the lack of a convincing argument for incompleteness in the literature, Minimalism holds all well-formed sentences to be truth-evaluable.17

This discussion has revealed clearly the problem with the strict formal semantic approach. Because Minimalism maintains that the semantic content of all sentences is propositional content, some appeal to context of utterance must be allowable to accommodate demonstratives, indexicals, and tense markers. Minimalism maintains that the number of expressions in language that are context sensitive, however, is limited.18 That is to say, not any word can become context-sensitive because of a property of its token of use in a particular context19 or can be said to be context-sensitive without proper evidence that it indeed is. As I will

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17 The unspoken assumption here is, again, that truth-conditions express how sentences relate to circumstances in the world; they are not expressing the truth or falsity of communicated meaning or speech act content.
18 See Kaplan 1989 for a discussion about, and oft-used list of, indexicals in English.
19 See Travis 2008 for a diverging viewpoint and a discussion of how almost any word can be seen as context-
return to below, it is in the motivation for allowing certain expressions to appeal to context of utterance that Minimalism is able to retain its formal approach while allowing for instances of context-intrusion into semantic meaning.

Minimalism sets itself apart from prominent competing theories in its aforementioned formal commitments. Other prominent theories in the literature include contextualism (Travis 2008), truth-conditional pragmatics (Recanati 2010), and Relevance Theory (Sperber and Wilson 1985, 2002). However, the type of Minimalism I support must also be distinguished from other theories of Semantic Minimalism within the literature, notably Cappelen and Lepore (2005). While Cappelen and Lepore endorse a similar semantic system as Borg's Minimalism, the two theories part ways over the crucial point of whether semantic content of well-formed sentences necessarily delivers propositional, truth-conditional content. Borg, as do I, argues that the semantic content of well-formed sentences does, and indeed must, reach the level of propositional content. Cappelen and Lepore maintain that in certain instances the semantic content of well-formed sentences is not truth-evaluable without the addition of pragmatic content. I have discussed the reasons for rejecting Cappelen and Lepore's claims, and for the rest of this essay I will hold the theory of Minimalism discussed to be committed to the four main tenets laid out by Borg and in the preceding paragraphs.

A Theory Divided?: Similarities, Divergences, and Proposed Resolutions

While the descriptions of Minimalism and Neo-Griceanism presented above are by necessity summaries of complex and detailed theories, the descriptions are sufficient to make clear with some further explanation the prima facie compatibility of the two views. The fundamental compatibility of the theories is the distinction made between the literal (conventional) semantic sensitive.
meaning of what is 'said' in an utterance and the utterance's pragmatic communicated content. Both theories similarly claim that semantic content runs via syntactic content with accommodation for pragmatic intrusion only in limited context-sensitive expressions. The Neo-Gricean/Gricean content of what is 'said' in an utterance is analogous to Minimalism's semantic content of an utterance; it is the *truth-conditional* content of the sentence uttered. Indeed, Minimalism and Neo-Griceanism are the only theories operating within the relevant literature that divide utterances into propositional semantic content and abductive pragmatic content.\(^{20}\)

Additionally, Minimalism and Neo-Griceanism are both committed to the existence of a metaphysical dependence between semantics and psychology in which facts about semantic content are determined by facts about the minds of people who speak that language (Borg, forthcoming).\(^ {21}\) We are able, therefore, to look to language to shed light on the workings of the mind. Indeed, it is this relationship between semantics and psychology that allows Minimalists to postulate the existence of a semantics module in the mind. Because of these fundamental similarities between Minimalism and Neo-Gricean/Gricean theory, Minimalism has adopted Grice's program of implicatures more-or-less in its entirety. Grice's theory serves as a pragmatic complement to Minimalism's semantic-oriented theory.\(^ {22}\) There are, however, several important divergences between the Neo-Gricean and Minimalist views. The remainder of this essay will explore these differences and offer proposals to establish harmony between the two views.

\(^{20}\) Close but diverging theories include Levinson's, which includes implicatures in truth-conditional content; Carston/Sperber's and Wilson's, which allow significant pragmatic intrusion into truth-conditional meaning via explicatures; and Bach's, which allows pragmatic intrusion into truth-conditional meaning via implicitures.

\(^{21}\) See Borg (forthcoming) for a discussion about alternatives and challenges to this view.

\(^{22}\) See Borg (forthcoming) for a discussion on how the adoption of Grice's system leaves Minimalism open to the same criticisms that are often levied against Gricean pragmatics, including the charge that the Gricean system does not fit with empirical evidence of cognitive processing. As I find these criticisms unpersuasive, and as they are addressed extensively elsewhere, I will not discuss them here.
The Puzzle of Generalized Conversational Implicatures

In *Three Theories of Implicature: Default Theory, Relevance Theory, and Minimalism*, Borg lays out a Minimalist theory of generalized conversational implicatures (GCIs) that diverges from Neo-Gricean theory. In this section, I will propose a modified Minimalist version of GCIs that aligns more closely with the Neo-Gricean approach. The crutch of the divergence between the Minimalist and Neo-Gricean approaches lies in Borg's attempt to show that GCIs are recoverable by the same process as the recovery of literal semantic meaning, “[R]ecovery of a GCI, like the recovery of literal meaning ... could be the result of a purely computational, syntax-driven reasoning process” (Borg 2009: 17). I argue that Borg's motivation for pursuing this treatment of GCIs stems from the commitments of the modular picture which she employs to delineate pragmatic from semantic content. Within the modular picture GCIs fit neatly neither into purely semantic content, because they require information beyond the literal semantic meaning of the word carrying the implicature to be recovered, nor into fully pragmatic content, because they do not require knowledge of the speaker's current state of mind to be recovered. In *Minimal Semantics*, Borg takes no explicit stand on the status of GCIs, but concludes that the existence of such phenomena could be accommodated by the modular picture when one remembers that modularity is a property of degree (133; Fodor 1983). In *Implicatures*, Borg explores the phenomena in greater depth and posits a third and separate (possibly modular) system that handles GCIs exclusively (17). While this analysis is consistent with a modular picture of the phenomenon, it belies the speaker-based system of implicatures advocated by Neo-Griceans for the reasons outlined below.

One point of difference between the two treatments of implicatures originates from Borg's characterization of GCIs as habitual inferences. The retrieval of GCIs requires “information
about what speakers using the given terms commonly tend to convey” (2009: 17); that is, the retrieval requires information about communicated content. What separates this communicated meaning from other pragmatic or speech act meaning in Borg's view is that it does not require access to the current state of mind of the speaker at the time of utterance. Instead, Borg argues, the GCI system is operating over statistics of what speakers have intended (communicated) by those utterances in past conversations. In this way, GCIs are “computationally-based, habitual inferences, which contrast to the recovery of [purely pragmatically-driven] PCIs.” (ibid.: 20).

This description risks falling prey to a point of criticism of Horn's, that “Grice's goal of developing an account of speaker meaning...is distinct from [the] goal of developing a cognitive psychological model of utterance interpretation.” (2005: 194). Once we begin describing implicatures (even generalized ones) as inferences, we risk slipping into a hearer-based approach as opposed to a speaker-based approach. Hence, Horn's description (from Grice) of GCIs as those implicatures that are induced unless a special or marked context is present (Horn 2004). While the characterization of implicatures as inferences is advocated by some (e.g. Relevance Theorists), it is purposefully an approach avoided by Horn and one which I think Minimalism can and should avoid as well.

I do not, of course, mean that inferences play no role in the system of implicatures. I only mean to stress that while GCIs may certainly license (correct or incorrect) inferences, they are not inferences themselves. Horn levies a similar line of criticism against Levinson's default inference view of implicatures, also discussed and rejected in Borg 2009. As Horn states, “While there is a natural tendency to depict the pragmatic enterprise in terms of the interpretation of utterances … this yields a distorted view of Grice's goals and an incomplete and often counter-

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23 See also Saul 2002 for a discussion of how Relevance Theorists incorrectly interpret Grice as pursuing the project of describing the psychological processes by which speakers interpret utterances, which is, of course, the project of the Relevance Theorists.

24 I am ascribing “context” here to context of utterance, although I discuss problems with this criteria below.
intuitive picture of what is said within a discourse context.” (2005: 193). If GCIs are to be interpreted as habitual inferences by a hearer, even if those inferences are “ossified” (in Borg's terms) forms of particularized conversational implicatures (PCIs), then GCIs themselves are conclusions reached by the listener and may or may not conform to what the speaker intended to implicate (or “meant”) by a token utterance. This move puts us firmly in the realm of hearer interpretation, a move I believe is inconsistent and incompatible with a Neo-Gricean system of speaker meaning.

To avoid this problem, the Minimalist could argue that it is not a feature of whether or not a hearer interprets an utterance as carrying a particular implicature that determines whether the implicature is there – a word or phrase can carry an implicature regardless of whether the audience is aware of it – but, instead, what makes a particular word or phrase carry the GCI are facts about what utterances of the word or phrase typically convey in virtue of conventional and speaker meaning. The question then is whether the part of a person's cognitive system that deals with recovering this piece of content would generate the GCI. To avoid this problem, the Minimalist could argue that it is not a feature of whether or not a hearer interprets an utterance as carrying a particular implicature that determines whether the implicature is there – a word or phrase can carry an implicature regardless of whether the audience is aware of it – but, instead, what makes a particular word or phrase carry the GCI are facts about what utterances of the word or phrase typically convey in virtue of conventional and speaker meaning. The question then is whether the part of a person's cognitive system that deals with recovering this piece of content would generate the GCI. To avoid this problem, the Minimalist could argue that it is not a feature of whether or not a hearer interprets an utterance as carrying a particular implicature that determines whether the implicature is there – a word or phrase can carry an implicature regardless of whether the audience is aware of it – but, instead, what makes a particular word or phrase carry the GCI are facts about what utterances of the word or phrase typically convey in virtue of conventional and speaker meaning. The question then is whether the part of a person's cognitive system that deals with recovering this piece of content would generate the GCI. To avoid this problem, the Minimalist could argue that it is not a feature of whether or not a hearer interprets an utterance as carrying a particular implicature that determines whether the implicature is there – a word or phrase can carry an implicature regardless of whether the audience is aware of it – but, instead, what makes a particular word or phrase carry the GCI are facts about what utterances of the word or phrase typically convey in virtue of conventional and speaker meaning. The question then is whether the part of a person's cognitive system that deals with recovering this piece of content would generate the GCI. To avoid this problem, the Minimalist could argue that it is not a feature of whether or not a hearer interprets an utterance as carrying a particular implicature that determines whether the implicature is there – a word or phrase can carry an implicature regardless of whether the audience is aware of it – but, instead, what makes a particular word or phrase carry the GCI are facts about what utterances of the word or phrase typically convey in virtue of conventional and speaker meaning. The question then is whether the part of a person's cognitive system that deals with recovering this piece of content would generate the GCI.

My concern with this move is that, although it seems to avoid the serious problem of conflating speaker meaning and hearer interpretation, it is still removing the intentionality of a given speaker from the determination of what she means by her utterance. Instead of relying on a speaker's intention when determining the pragmatic and communicated content of her utterance, this view relies on some notion of what speakers in general, though not always, mean by a particular word or phrase to determine what is communicated by the given utterance.

For example, with the utterance “The cat is under the bed or in the hamper” the speaker implicates that she does not know for certain that the cat is under the bed. The communicated

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Thank you to Emma Borg for proposing this solution in response to an earlier draft of this paper. My comments here are a response to that proposal.
content is then something like “It is true that the cat is under the bed or it is true that the cat is in
the hamper and I do not know which is true.” We can see clearly that the speaker's uncertainty of
the cat's location is an implicature because the reading can be cancelled: “The cat is under the
bed or in the hamper; I know which but I am not going to tell you.” Borg's system of GCIs
interprets the implicature because of facts about is usually meant by the term 'or'; ostensibly that
when used between two clauses it signifies that the utterer does not know which of the two
clauses are true.

I see two problems with this reasoning, each problem following from one of the two
possible interpretations of Borg's claim as I understand it. One problem arises from the
interpretation in which facts about what is typically conveyed by the utterance of 'or' are taken to
exist independently of a particular hearer's interpretation or a particular utterer's intention and
rely instead on the word's general usage within a language community. This determination of
GCI meaning seems to run dangerously close to that of conventional meaning. If the implicated
meaning carried by a lexical item is recovered by the same cognitive processes as the literal
meaning of the lexical item and is based in facts about aggregate usage in the language
community, then the two meanings begin to look like two conventional readings of an
ambiguous term. In fact, under this interpretation Borg seems to be equivocating, not willing to
claim that GCIs are not pragmatic yet attempting to show that they share properties with and are
recoverable by the same processes as that of literal meaning.

The second problem arises in the interpretation in which the content of what is typically
conveyed by 'or' depends on facts about a particular hearer's experience with what is typically
meant by utterances of 'or'. This interpretation seems plausible given Borg's only explicit
argument for why GCIs lie outside of the language faculty (and thus constitute pragmatic
content), which is that GCI understanding emerges from a prior PCI understanding. She states that “It is because GCI understanding is taken...to emerge from prior PCI understanding that the mechanisms underpinning GCI recovery are held to lie outside the language faculty proper.” (2009: 17). This reasoning requires GCI understanding to be dependent upon hearer interpretation; GCIs are something that a hearer learns to interpret through time and exposure.

This on its face does not appear problematic; it is not controversial that people learn to interpret speaker meaning over time. The problem, as I see it, arises in the move from PCI to GCI. If GCIs are former PCIs – and their emergence is dependent upon individual exposure – then what may be a PCI to one person may be a GCI to another. It follows logically from this that the determination of whether any particular implicature is to be considered a PCI or a GCI is then not any feature of the context (or history of contexts) in which it is or has been uttered – because this will be different from person to person – but the processes by which it is recovered in the mind of the person who hears it. This is clearly not faithful to Grice's division, nor does it provide a stable divide between the two phenomena.

The move to disconnect GCIs from speaker intentions creates a problematic and unstable 'halfway-between' status for GCIs. To summarize my recent discussion, I think the move to classify GCIs as a phenomenon that lies somewhere in between semantic and pragmatic content is a move necessitated by the commitments of Borg’s Minimal Semantics program. Borg argues that GCIs can be recovered by a listener without access to the current state of mind of the speaker, thus they are not fully pragmatic content (2009). However, they are not meanings that can be retrieved via the formal syntactic and lexical elements contained within a sentence, and are therefore not part of the semantics either. In Horn's Neo-Gricean system, GCIs and PCIs are

26 Borg (comment on an earlier draft) criticizes this point by saying that GCIs are fully pragmatic in her system. However, my discussion here seeks to show that her description of GCIs and her commitments associated to them entail that GCIs cannot be fully pragmatic in my understanding of the categorization.
distinguished as pragmatic content because they are calculable, non-detachable, and cancellable without contradiction (Horn 2004: 2). One concern is the cancellability of pragmatic meaning (Horn 2008: 12). Minimalism's treatment of GCI s pushes some cancellable meaning into the realm of the non-(fully)pragmatic. One could respond that this is not a concern because cancellability can be used only as a test for “non-semantic” meaning. However, if we go this route it is unclear how to determine what counts as partially-pragmatic versus fully-pragmatic content.

A concern regarding the Neo-Gricean system of implicatures which Minimalism bypasses is the question of what counts as a “special” context in which GCI meaning is blocked. As all utterances occur in some context, more must be said regarding what constitutes a blocking context. One potential, though in my view not quite satisfactory, solution offered by Horn is that a generalized conversational implicature is an implicature that speakers make in more contexts than not (2005). If the criterion for an implicature to become a GCI as opposed to a PCI is merely occurrence in over 50 percent of contexts, I think it is doubtful that an implicature which is carried in, say, 60 percent of utterances containing the word would become ossified in the sense Borg describes. Even if one rejects Horn's solution, Minimalism still fails to offer a similar explanation for when a term has been encountered a sufficient number of times by a listener to be

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27 If one wants to argue, for example, that other phenomena, such as disambiguation, act similarly. See Saul 2002: 355 for a more in-depth discussion. I would argue that disambiguation takes place at the syntactic level.
28 This is taken directly from Grice, “[T]hese are cases of generalized conversational implicature . . . [in which] the use of a certain form of words in an utterance would normally (in the absence of special circumstances) carry such-and-such implicature or type of implicature.” (1989: 37)
29 To be clear, the context in this discussion signals or suggests the presence of the implicature, but it is not sufficient for the implicature to be carried: the speaker intention must also be present. Therefore in an utterance such as “The cat is under the bed or in the hamper” the speaker will likely more often than not implicate that she does not know in which location the cat is, but she may very well know. In this case the implicature of the speaker's ignorance of the cat's location is not present in the utterance's communicated content. However, it is fair for the listener to assume it is present, if she assumes the speaker to be conforming to the Conversational Maxims, that the speaker is a generally cooperative interlocutor, etc. But it is unclear in Borg's system what determines the existence of the implicature. For example, if the speaker is being uncooperative but her interlocutor does not realize, does the implicature carried by 'or' still exist in the communicated content (unless the speaker cancels it by overtly stating that she knows where the cat is but is not telling)?
pushed out of the pragmatic (or PCI) process into the GCI-specific system. Additionally, if one wants to resist the move towards grammaticalization of implicature meaning (a move advocated by scholars such as Chierchia and Kratzer), which Neo-Griceans and Minimalists do, it is necessary to have an explanation of why GCIs can become ossified through individual exposure yet remain non-conventionalized within the language community in which they are used.

How, then, to reconcile the two theories? First, we need to look at the criticisms of the original Gricean framework off of which Borg bases her modified theory of GCIs (Borg, forthcoming). A main problem posed in the literature for Grice's framework is that some implicatures appear to be computed *locally* instead of globally as the Gricean model predicts. For example, the two following sentences seem to be truth-conditionally nonequivalent:

1) If Jill blew the whistle on poor practices at work and was sacked, then she is entitled to compensation.

2) If Jill was sacked and blew the whistle on poor practices at work, then she is entitled to compensation.

The argument is that the temporal aspect of the two clauses connected by 'and' is truth-conditionally relevant to each of the sentences; thus, it is the pragmatically enriched reading of 'and' that is part of the truth-conditions of each sentence, not the logical reading of 'and' that Gricean theory would predict. The apparent truth-conditional relevancy of such GCIs is used as evidence for claims that a) implicatures should be included in truth-conditional content (Levinson 2000) and b) there is a syntactic not pragmatic explanation of implicature readings (Chierchia 2004). Borg offers an explanation for this seeming truth-conditional relevancy and, while maintaining that it is only an *apparent* difference, argues that the reason for the apparent difference is due to the mechanical, habitual, and formal derivation of GCIs (2009).  

30 For additional problems with Levinson's and Chierchia's accounts see Borg 2009.
I wish to challenge the reasons necessitating this claim. Minimalism draws a clear and firm distinction between semantic content and communicated content. Indeed Minimalism “predicts sentence-level contents which usually fail to match ordinary interlocutors' intuitions about what is said by utterances of those sentences . . . [it is a] semantic theory which fails to respect typical judgments about speech act content.” (Borg 2011: 13).\(^{31}\) In the case of GCIs, the “said” meaning is the weaker, or logical, reading of the term carrying the implicature\(^ {32}\) and what is communicated is the direct/indirect speech act content which includes any speaker implicatures. If Minimalism is as comfortable divorcing semantic content from speaker intuitions of what has been communicated in a given utterance as it is, why is Borg so concerned, then, that the communicated, and thereby intuitive, meaning of GCIs sometimes fails to match the literal, semantic meaning of the lexical items that carry those implicatures? Minimalism restricts truth-conditional content to semantic content of a sentence; therefore, it should not be expected that truth-conditional content is available by appeal to speaker intuitions about any given utterance.

The Neo-Gricean system is well equipped to explain the differences between semantic content and speech act content. In examples (1) and (2) above, the propositional, semantic content of each example is truth-conditionally equivalent. The temporal (and suggested causal) relationship between the two phrases in the antecedent clause is truth-conditionally irrelevant; thus, whether Jill blew the whistle before being sacked or was sacked before blowing the whistle is irrelevant, what \textit{is} relevant (truth-conditionally) is whether both events occurred. The speech act content of the examples implicates a temporal order between the two antecedent phrases and suggests that the truth-conditions of the \textit{communicated} content is different from that of the

\(^{31}\) Where what is “said” in this quote is referring to a wider communicated sense of ‘said', not the Gricean sense used earlier.

\(^{32}\) A simplified example: Jill got married and had a baby = 1 iff \([\text{PAST}[\text{Jill(MARRIED)}] \land \text{Jill(BABY)]=1}]\) In this case the implicated meaning of “Jill got married and then had a baby” is carried through Grice's Manner submaxim “Be Orderly.”
semantic content. The speech act content of (1) would likely be something similar to this: 3) “If Jill blew the whistle on poor practices at work and then was sacked, and being sacked was a consequence of her being a whistleblower at work, then she is entitled to compensation,” implicating not only a temporal relationship between the antecedent phrases but also a causal relationship. The hearer could calculate this speech act content through the assumption that the speaker is adhering to Grice's submaxim of Manner: Be orderly, and maxim of Relation: Be relevant (Grice 1989: 27). Therefore while (3) may indeed be what the speaker meant in uttering (1), it is not what she said. The Neo-Gricean explanation maintains the distinction between semantic, said content and pragmatic, communicated content to which both Griceanism and Minimalism are committed. It also provides an explanation of how speech act content can be derived, or calculated, from semantic content. Because Borg is committed to the principle that one cannot affirm semantic content from knowledge of speech act content33 (2009: 121), and because the Neo-Gricean system is adept at charting the difference between the two contents, the charge that truth-conditional relevancy cannot be determined from speaker intuitions of what certain utterances convey is not a challenge off of which to base a modified system of GCIs.

A second challenge to the Gricean global reading of implicatures is the argument that accounts of scalar implicatures (Gazdar 1967, Horn 1989) do not explain readings in cases in which a scalar is in the scope of a logical operator. Borg (forthcoming) uses a slightly modified example from Sauerland 2004:34

4) Kai had the broccoli or some of the peas last night.

Sauerland gives a detailed explanation of how to resolve this problem within a Gricean framework, but I will focus on the example as put by Borg. What is desired is the pragmatic

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33 For an argument that one can, see Soames 2002.
34 I am not sure that I am convinced by Sauerland's claim that the logical 'some and possibly all' reading in (1) is an intuitively false pragmatic reading; however, I'll proceed as though that is the case.
reading “Kai had [either] the broccoli or some [but not all] of the peas last night.” Following Sauerland's system, we calculate the implicature generated by the main connective 'or' first:

5) Not the case that [Kai had the broccoli and some of the peas last night].

This follows the Gazdar system in which the operator is replaced by the stronger item on the relevant scale and negated. The following premises are then yielded:

6) Kai didn't have the broccoli.

7) Kai didn't have some of the peas.

(7) can be true in a case in which Kai ate all of the peas because under negation a scalar reverses strength; thus 'all' is less informative than 'some'. We can see that the 'some but not all' reading is also cancellable, “Kai didn't have some of the peas, he had all of them.” However, this conclusion is incompatible with the desired reading of (4). I believe that this case is not as troubling as it may seem. The confusion results from a misleading characterization of the premises. The negation in (5) is placed as a negation with scope over the entire original sentence; thus the negation is carried over both clauses. However, in (6) and (7) the negation is placed within each clause, rendering a reading in which the negation has a possible scope reading over the constituents “the broccoli” and “some of the peas”. Instead, the negation should have been placed as in (5), with scope over the clauses “Kai had the broccoli” and “Kai had some of the peas”. Thus we have (8): ¬[Kai had some (and possibly all) of the peas] as the correct rendering of (7). This rendering of (7) does not allow a reading in which Kai had all the peas, and thus the apparent problem is dissolved.35

The last few paragraphs sought to demonstrate that the criticisms of the original Gricean framework off of which Borg bases her modified theory of GCIs are problematic and in

35 A similar example of a scalar under negation is discussed in Horn 1989: 234, in which it is argued that a move from a) It is not the case that Paul ate some of the eggs to a') POSS[Paul ate all the eggs] should be blocked.
themselves do not warrant a break from the Gricean program of implicatures expounded upon and advanced by Horn. Only one reason for the break, then, remains. As mentioned earlier, Borg's characterization of pragmatic content entails that it appeals to speaker intentions at the time of utterance; however, GCIls do not appear to do so. I believe that, in this case, appearances are deceiving. It is a constitutive characteristic of implicatures that they are induced by the speaker – not by the words which carry them. It is a small step from that premise to argue, then, that what makes an implicature generalized instead of particularized is that this intention is generally – except in the presence of marked context which signals its absence – present in utterances of the word or phrase which carries it. It is the intention of the speaker when uttering the word or phrase, not the meaning of the word or phrase as it is typically conveyed, that determines the implicature.

This is not to say that implicatures cannot be blocked in particular contexts. A speaker's meaning is still constrained by constitutive characteristics of the language, such as syntactic rules and conventional meaning, and thus there may be particular contexts in which the pragmatic meaning of a particular word which can carry a GCI cannot be rendered. Setting these cases aside, it is indeed speaker intention to which a hearer is appealing when determining communicated content of an utterance. This is seen in the Neo-Gricean explanation of example (1) given above, in which it is the speaker's intention to indicate a temporal and causal relationship between the antecedent phrases which determines the implicature that such a relationship holds. Indeed, setting speaker intention aside, it is unclear what would account for the variety in implicated meaning that can arise from the lexical items which carry GCIs. We must be careful not to conflate the frequency of the intentionality associated with a word or phrase that carries an implicature with the frequency of the meaning that is conveyed from this

36 See Horn 1989 for a discussion and history of proposals of such contexts.
intentionality.

If the Minimalist concedes this point there is nothing to prevent her from adopting the Neo-Gricean system of GCI's. There is insufficient other evidence and motivation to place GCI's within a different cognitive system than PCI's and to substantiate the claim that GCI's are recovered via formally tractable features dependent on what certain utterances of sentences which contain terms carrying those GCI's are generally taken to mean. For these reasons, and those laid out above, GCI's should thus be treated as fully pragmatic (outside the language faculty) phenomena that are recovered via appeal to speaker intentions in the manner set out by Horn (2004, elsewhere). It is the burden of Borg's Minimalism to explain, otherwise, 1) how its proposed system is an advancement upon the Neo-Gricean schema already in place and 2) how and why GCI's come to be situated in and perdure in the seemingly unstable ground between conventionalization and fully pragmatic content.

**Pragmatic Intrusion**

A point of dispute within the literature is over what content constitutes what is said by a given utterance. A bedrock principle of Minimalism and Neo-Griceanism is the commitment to holding what is 'said' by an utterance to the syntactically constrained view originally proposed by Grice (Grice 1989: 87, Horn 2006b). Scholars advocating any of the varieties of truth-conditional pragmatics – Recanati, Sperber and Wilson, Carston, Levinson – have largely jettisoned this notion of what is said and replaced it with a more expansive idea in which what is said by an utterance is inclusive of varying amounts of pragmatic and contextual content. These theories conflate semantic and pragmatic content by infusing semantic meaning with contextual

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37 I am using “what is said” here in the technical Gricean sense, Borg 2009's “minimal meaning”, not the intuitive notion that is discussed in Borg 2004 Chapter 2.

38 For an extensive defense of Grice's original distinction see Bach 2001.
information based on appeals to speaker intuitions regarding what certain sentences may mean under certain circumstances. Minimalism, by contrast, unequivocally isolates minimal 'said' content from speech act content by requiring that semantic content run via syntax. Any contribution from or appeal to context of utterance must in turn be syntactically (or morphemically) triggered (Borg 2009) and be itself formally tractable. Horn, while conceding that “there is...no royal road to what is said” (2006b: 90), also rejects the theories of the truth-conditional pragmatists and the reliability of intuitions in determining semantic content.

While cleaving to Grice's program in the sense just described, Minimalism and Neo-Griceanism do depart from the original Gricean program in one important way. Grice maintained that saying something entails meaning it also, hence his use of “make as if to say” in nonliteral uses of language such as metaphor (1989: 41). Horn's minimal semantic notion of “what is said” does not entail speaker meaning and is, in this way, a modification of the classic Gricean program (Carston 2005, Horn 2006b). Minimalism (as discussed in Borg 2004, Chapter 2) must also reject such an entailment relation between saying and meaning. It is necessary to reject this aspect of Grice's program because it does not allow for the accommodation of metaphorical and ironic speech or slips of the tongue. For example, if I say “My what a lovely day it is today” when it is pouring rain, it is likely that I do not mean that it is actually a lovely day; I probably mean the exact opposite. However, I have still said that it is a lovely day. Because Grice would not allow me to say this without meaning it also, we must abandon this part of Grice's theory. Despite this necessary modification, Minimalism and Neo-Griceanism stand apart from other theories as descendents of Grice's original distinction between what is said and what is meant by

39 I excluded under this category theorists such as Jason Stanley who posit syntactic explanations for context-sensitivity; although, such theories are proposing syntactic explanations which are motivated by appeal to speaker intuitions of context-sensitive meaning.

40 This excludes contributions of context such as speaker intentions. See Borg 2011 pg. 11-12 for a defense of this limitation.

41 Allowing, for example, cases of metaphorical and ironic speech or slips of the tongue.
Another current discord in the literature on Minimalism and Neo-Griceanism is over the point at which a truth-conditional proposition can be reached. The level of pragmatic intrusion necessary to reach propositional content is highly disputed. Bach argues that pragmatic intrusion, needed for the “completion” or “expansion” of a sentence, is often necessary to reach propositional content; he calls this truth-conditional pragmatic content an 'impliciture' (Bach 2006). Relevance Theorists argue that a similar level of pragmatic intrusion is often necessary to reach propositional content; however, they call the truth-conditional pragmatic content an “explicature”. Both Bach and Relevance Theorists agree that implicatures constitute pragmatic content that is not included in the truth-conditional content of sentences. Levinson, on the other hand, argues that implicatures are included in the truth-conditional content of sentences (2000). Recall that Minimalism holds that semantic content for well-formed sentences is propositional, truth-evaluable content. Thus 'what is said' (again used in its technical sense) relativized to a context of utterance always reaches a truth-conditional level of meaning. Like Minimalism, Neo-Griceanism maintains a distinction between pragmatic content, which includes implicatures, and truth-conditional semantic content of a sentence. Implicature intrusion into truth-conditional meaning, argues Horn, is inconsistent with fundamental Gricean principles because “implicatures (conversational or conventional) by definition do not affect the truth conditions of the proposition directly expressed” (2005: 193, emphasis mine).

Turning from implicatures to other forms of pragmatic content, another discord is

42 Bach (2006) argues that this view does not preclude implicatures from having truth-conditions of their own; implicatures are just not to be included in the truth-evaluable content of a sentence.

43 Minimalism's basic argument against this view (Borg, forthcoming) is that it creates a 'Framing Problem' in which any contextual information can arguably become relevant for inclusion in the inserted pragmatic content, threatening to create a recursive insertion of additional information. Theorists advocating this view have not proposed any way of restricting the additional material in a way which does not appeal to speech act intuitions of what constitutes 'completeness' of an utterance or 'relevant' material.
discovered between Neo-Griceanism and Minimalism. The two views part ways over the commitment to the semantic content of all well-formed sentences necessarily reaching propositional content. While implicatures are placed uncontroversially outside the domain of truth-conditional content, Neo-Griceanism concedes that other pragmatic forces may not necessarily do so. Horn states his position clearly when he says that “pragmatic inference may well be responsible for the determination of non-directly expressed, truth-conditionally relevant propositions” (ibid., emphasis mine). Horn follows Bach in rejecting the relevance theorists' claim that this content is an “explicature” (because it is not “explicit” (Horn 2008)) and, while not openly endorsing, seems sympathetic to Bach's claim that this content is an “impliciture”. It is Horn's acceptance of pragmatic intrusion that presents the largest chasm between Minimalism and Neo-Griceanism.

Pragmatic intrusion does not, however, present an insurmountable obstacle for the establishment of harmony between the two views. Horn's embrace of pragmatic intrusion is seen explicitly only in cases of cardinal numbers. In holding this view, Horn is rejecting the Neo-Gricean picture that he laid out in 1972 and advanced for twenty years before shifting position in his 1992 essay *The Said and the Unsaid*. According to Horn's 1972 system of scalar implicatures, an item on the weak, i.e. right, end of a scale (〈most, some, few〉; 〈hot, warm, lukewarm〉) will implicate (by Q-Implicature) that the stronger values on the scale do not hold as far as the speaker knows. Scalar items are thus lower-bounded by their semantic meaning and upper-bounded by implicature. The upper-bounded meaning is computed as a GCI, outside of what is said and outside of truth-conditional content, which obviates appeals to lexical ambiguity. While Horn has not repudiated this system for scalar implicatures, he has rejected the system's applicability to cardinal numbers.
Horn now argues, along with Carston (1988), that cardinal numbers are semantically underspecified (Horn 1992). In sentences that include cardinal numbers, “propositional content is filled in only through reference to the context of utterance” (Horn 2008: 4). In these cases context must intrude directly into semantic content to render propositional, truth-conditional meaning. To use an example from Horn 2008, if a professor is asked regarding a test she administered to her class, “Did 10 students pass?”, she must first determine whether the questioner was asking whether at least 10 passed or if exactly 10 passed before determining whether to respond “yes” or “no”. Depending upon the context, a simple “no” could commit her to communicating that “Fewer than 10 passed” or that “Either fewer or more than 10 passed.” Compare also the statement “She is surprised that 5 students failed” to the statement “She is surprised that most of the students failed.” The second example makes sense only if she had expected half of the students to pass, while the first may be consistent with expecting either more or less than 5 students to fail, while it is very unlikely that she meant exactly 5 students.

There are several options for the Minimalist to take regarding the (apparent) problem of cardinals. She could argue that cardinal numbers are ambiguous and can be resolved similarly to other semantic ambiguities as discussed in Borg 2004 (Chapter 2). However, it is unlikely that cardinal numbers are actually ambiguous, in the sense of having multiple underlying syntactic or semantic representations, as opposed to having a single representation that can correspond to different states of affairs. For example, I could say “I have one son and so does she,” which could be true in the case in which I have only one son and she has two sons. Compare with the

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44 For example, “Jill has 2 children.” cannot be determined to mean either Jill has at least 2 children or Jill has exactly 2 children without appeal to the context of utterance.
45 Similar examples are discussed in Horn 2006a.
46 Horn argues for the non-ambiguity of scalars along a different line, Grice's Modified Occam's Razor principle: “Senses are not to be multiplied beyond necessity” (Horn 2004: 9; Grice 1978: 47). I will treat this as a theoretical reason supporting the view that we should not seek ambiguity here, not as a methodological reason as to why there is no underlying syntactic ambiguity.
sentence, “I have a mouse on my desk and so does she,” which is true only in a case in which we either both have a rodent or we both have a piece of computer equipment on our desks. In the cardinal sentence, the anaphoric relationship can be established even while the antecedent and anaphoric clause correspond to different states of affairs. This demonstrates that there is no syntactic ambiguity at work, which would bind the anaphoric constituent to the antecedent as we see in the mouse sentence.

Another option is to treat cardinals as PCIs, in which the speaker implicates the two-sided meaning in certain contexts. This move would require moving the “said” meaning of the cardinal back into our semantics (because implicatures cannot be part of truth-conditions), which leaves the minimalist with the difficult task of specifying the literal meaning of a cardinal operator. It is in this endeavor that we face the crux of the problem. The lower-bounded (literal) cardinal reading in the implicature picture so far looks to be 'at least n'. This meaning becomes untenable, though, when one recognizes that cardinals, unlike indefinite quantifiers, have the property of being upper and lower bounded by meaning. Because of this property, cardinals can be reversed situationally and linguistically. For example, “I heard you're down to 4 more months of school.” “Yes, in fact I'm down to 3!” (Sadock, ms). In this example the cardinal is being used in the meaning 'at most n'. So far, we have seen that the lower-bounded, upper-bounded, and exact readings of cardinals are all cancellable. Thus we are left with a set of meanings for cardinals {at most n, exactly n, at least n} none of which can, according to the cancellability criterion for literal meaning, be the semantic meaning of a cardinal number. If the minimalist wants to support the theory that cardinal readings are implicatures, she is faced with the problem

47 See Sadock and Zwicky 1975 for these definitions and for a discussion of ambiguity tests.
48 As we have seen, it cannot be “exactly n” because this meaning is cancellable: “Jill wrote 2 books, in fact she wrote 3.”
49 A slightly different example would be: “I heard there's 4 more months of school.” “No, 5 actually.” This clearly demonstrates the use of the cardinal in its “at most n” upper-bound meaning.
of specifying the literal meaning of a cardinal number when no literal meaning seems to exist. Confronted with this situation, the implicature theory proposed above looks untenable.

It is at this point I propose that we may make an appeal to context of utterance to fill in the non-specific, or underdetermined, semantic meaning. Borg (2004 and elsewhere) has argued that Minimalism, as a moderate formal semantic system, may accommodate appeals to context of utterance in order to reach propositional, truth-conditional content. These appeals to context are tightly constrained and permissible only in cases in which the appeal is syntactically or morphologically triggered by a constituent within a given sentence. The contextual features to which the appeals may look are also limited and consist only of objective features of context; we cannot allow appeals to abductive processes such as speaker intentions without beginning to blur the line between the formal system and a use-based system. The Minimalist is also committed to holding that there are only a limited number of expressions in language that can count as context-sensitive.  

While there are no tests yet in the literature that would conclusively demonstrate whether a given term counts as an indexical or context-sensitive term, Minimalism can rule out tests that appeal to speaker intuitions of what particular lexical items mean. Therefore, while Minimalism itself is not inimical to the idea of there being more context-sensitive expressions in language than those laid out originally by Kaplan, the motivation for providing an indexical meaning to a term that falls outside of the central cases (such as “I”, “there”), in which the indexicality of the term seems to be ingrained in the semantic meaning of the term itself, must be a claim other than that of providing an explanation about semantic intuitions.

The question with which we are faced, then, is whether cardinal numbers can pass the Minimalist's criteria for a context-sensitive expression. I suggest that there is enough prima  

50 Indeed, it is this tenet that holds Minimalism apart from Indexicalist approaches such as Stanley (2005).
51 For some attempts see Cappelen and Lepore tests referenced in Borg 2011.
52 An alternative theory for cardinals could be that the basic semantic meaning is the ordinal meaning, e.g. the meaning of 2 is that it follows 1 and precedes 3 (Sadock, ms). However, the ordinality view looks problematic
facie evidence to conclude that they can. First, our motivation for appealing to a context-sensitive meaning is not that of an appeal to semantic intuition. Indeed, semantic intuition would appeal much more strongly to the idea that there is a fixed meaning of a cardinal number that is fully exhausted by lexical semantic meaning. Instead, our motivation stems from the above demonstration that the behavior of cardinals is in fact inconsistent with this semantic intuition. Second, it is possible that there is a syntactic trigger within a cardinal that reveals it to be an indexical. Finally, we must be able to appeal to contexts that do not include abductive processes such as speaker intentions.

As mentioned in the discussion of GCIs, however, it does seem that speaker intentions are exactly the type of context that cardinals are appealing to. This worry is dispelled, though, when we remember that in the consideration of GCIs we are concerned with communicated meaning. When fixing truth conditions, we need only be concerned with filling in enough context to get to propositional, truth-evaluable form. The context of concern, therefore, is only that which can determine the reading that delivers propositional, not speaker, meaning. I want to suggest, albeit not in any satisfactory form, that there are conventional uses of cardinals that can by the nature of their use in a sentence deliver a truth-conditional meaning through a dynamic interpretation of that use. This is not to suggest that these meanings cannot be overridden by contextual features of utterances such as speaker intentions. However, it is clear that certain readings are conventionally used in certain contexts. For example, in mathematical contexts it is conventional to use a cardinal such as 12 to mean exactly 12. While I think it is necessary to be cautious and avoid slipping into an analysis that mirrors that of ambiguity resolution, there is promise that our semantics can appeal to contextual factors in these cases that are themselves formally tractable.

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when we consider that the scale is reversed for negative numbers. -1 is merely an appended form of 1, and thus the meanings should be compositional.
References


