

The breadth of semantics: reply to critics

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Introduction

Our book is an exploration of the scope and limits of linguistic knowledge. An important part of our view—one admirably summarized and explored by our critics in this special issue—is that speakers' knowledge of meaning in language goes much further than semantics, at least as traditionally conceived. We are arguing for a much more inclusive and eclectic account of meaning in language.

As our critics all observe, our reasoning draws heavily on the phenomenon of coordination, as characterized by Lewis (1969) in particular. When people have learned matching strategies for acting in concert with one another, there must be a special social competence that they rely on—in effect, a kind of convention. We use evidence of coordination between speakers and hearers to argue that the conventions that shape interpretation in language go further than syntax and truth-conditional semantics. We are prepared to take all of the interpretive conventions we find within our overarching characterization of meaning in language. We think this unifying view is as exciting in the opportunities that it offers as it is surprising. For example, in developing the approach further, Stojnic, Stone and Lepore (MS) offer a formal account of discourse coherence in terms of updates to relationships of prominence that completely determine how pronouns are resolved in context.

In different ways, each of our commentators acknowledges the diversity of conventions in interpretation. For example, Horn suggests that interpretation draws on conventions of usage; Szabo postulates nonlinguistic social conventions that inform interpretation; and Bezuidenhout appeals to extra-grammatical psychological procedures that guide interpretation in language-specific ways. Our critics propose these interpretive devices as explanations of the attested variation in interpretation across languages, cultures and contexts. These interpretive devices must therefore be learned by speakers—or more generally acquired—in response to the prevailing patterns of interpretation in speakers' environments. You could call this a key concession

5 to the arguments in our book—but that wouldn't really be fair. Their proposals represent longstanding views not developed specifically in reaction to our book. A better way to put it is that the possibilities Horn, Szabo and Bezuidenhout consider figure in the intellectual milieu we hoped to summarize and critically reconceptualize in our work.

The empirical scope of semantics

10 All of our critics see an important disjuncture between their new interpretive mechanisms and semantics. We do not. On our view, there are close affinities between the kinds of mechanisms our critics advert to and the constructs of formal semantics. It is surprisingly natural to present a conceptual framework that embraces them all. One of the goals of our book was to call attention to this uniformity.

15 To characterize semantics, we start from Lewis (1979) and his observation that across a wide range of social activities, from games to conversations, we find rules that maintain specific abstract distinctions as a function of ongoing events. In baseball, for example, the rules track such things as balls and strikes, 20 outs and runs. Just so, Lewis suggests, conversation involves rules that not only track the content that interlocutors have contributed but create a richly structured, abstract context which subsequent utterances can link up with. This is the conversational record.

25 In our view, interpretation draws eclectically on a variety of different kinds of interpretive rules, but these rules can all be characterized in very similar terms as instructions to update the conversational record. In particular, in our book, we explore speech act conventions, which describe the kinds of contributions utterances make to the conversational record; presuppositions, which link utterances to the current state of the conversational record; and information structure 30 rules that govern the relationship of utterances to two additional features of the conversational record: the goals of the conversation and the distinctions among salient alternatives.

35 In our view, these dimensions of meaning are all part of speaker's knowledge of language, rooted in convention and applied in deriving the interpretation of utterances, so it makes sense to think of them all as part of semantics. Moreover, we think that attending to these dimensions of meaning gives us the resources to capture any of the interpretive effects that Horn, Szabo and Bezuidenhout see as outside the scope of semantics. We will go through some important cases to make this point.

40 The idea of speech act conventions is that the conversational record maps out various kinds of commitments that interlocutors subscribe to; one role of meaning is to specify how these commitments change over time. For example, the conversational record includes something like a to-do list that tracks the obligations for action that interlocutors have introduced and accepted (Traum

and Allen 1994; Roberts 2004; Portner 2005). Requests update this to-do list, and in particular a convention that allows an utterance to take on a special interpretation as a request is nothing more than a statement about how this utterance updates the record. Thus—despite Searle’s (1975:76ff) declaration that they ‘are not meaning conventions’, and Horn’s apparent endorsement of the idea in his comments—on our view, conventions of use, like other semantic rules, describe the conventional contributions of utterances to the inquiry of interlocutors. In fact, we think semantic accounts will be most perspicuous when they highlight the commonalities among all these conventions of meaning, broadly conceived.¹ AQ3

Why should we group together all the rules for updating the record? Appealing to a special kind of meaning with indirect requests, as Horn seems to do, suggests that the request meaning floats free of other aspects of semantics. But this seems not to be the case. Dynamic changes to the conversational record interact with compositional syntax and semantics, as in conditional requests (see Starr 2014).

If John is there, can you please tell him to call me?

The speaker here is not requesting a conditional. The speaker does not merely want the hearer to make it true that if John is there, he is told to call. That could be achieved by making John leave. Rather, the speaker here is making a conditional request: a commitment that an action should take place that is in force only under certain circumstances. The indirect request seems to take scope under the antecedent of the conditional. And indeed Starr (MS) shows that we can give a precise formal account along these lines by cashing out the dynamics of the conversational record in suitable terms. The idea, in brief, is to treat requests as committing to preferences among possible outcomes and to treat the conditional antecedent as narrowing the set of possibilities across which the consequent update is understood to apply. We don’t see how appealing to conventions of use that are distinguished from conventions of meaning will allow for such a straightforward and uniform explanation of examples like this.²

The idea of presupposition, meanwhile, is that the meaning of an utterance can include a constraint on the conversational record; in using the utterance, the speaker takes for granted that this constraint is satisfied. For example, the verb *won* typically comes with the presupposition that its subject participated in the contest named by its object. Thus, the speaker who says, ‘Amy won the election,’ typically takes for granted that Amy was running in the election.

¹One influential way to do this (though not the only one), is through dynamic semantics, as explored (among many others) by Roberts (2004) and developed further by Starr (MS) in the work to be described presently. The idea is to formalize linguistic meaning using logical resources designed to characterize change over time. It’s then possible to interpret utterances as actions that update the state of the conversation in virtue of conventional preconditions and effects.

²Moreover, as Josh Armstrong notes, such utterances will also be challenging for any theory that purports to derive their meanings indirectly from the operation of general pragmatic principles.

In the book, we suggest that presuppositions often have a powerful role to play in processing—one that's in fact rather close to the notion of procedural meaning that Bezuidenhout invokes. When an utterance allows for multiple interpretations, the audience faces the challenge of disambiguation. The way we think of it, the audience must recover the same grammatical analysis of the utterance that the speaker had, and can consider a wide range of relevant cues—whatever available information correlates with utterances' implicit structure.³ Presuppositions offer one class of cue that can sometimes help. Interpretations whose presuppositions are satisfied tend to be more likely than interpretations whose presuppositions are not. For example, this report is potentially ambiguous:

Amy informed Betsy that she had won the election.

There is one reading where 'she' refers to Amy and another where 'she' refers to Betsy. Suppose, however, that we're in a context where it's established that Amy was running and Betsy was not. Then we know that it must be Amy who has won the election. Conversely, if we're in a context where it's established that Betsy was running and Amy was not, it must be Betsy who has won.

Van der Sandt's (1992) theory of presupposition as anaphora makes the procedural force of presuppositions particularly clear. For van der Sandt, presuppositions are interpreted by a process of resolution that matches them against representations of discourse context. In particular, if a presupposition contains a variable, the variable may get instantiated as a side effect of resolving the presupposition. On the theory of presupposition as anaphora, then, presuppositions can actually be understood as instructions to retrieve specific values from context. This model gives a particularly perspicuous way to describe the interpretive effects associated with particles such as 'too.'

Amy talks constantly about macarons, and Betsy raves about them too.

As this example shows, to make sense of 'too,' we have to retrieve a specific parallel from the context—and we do so even if that means making extra assumptions about what the speaker is describing (here, that what Amy says about macarons is positive).

Given this procedural interpretation, you can make much the same points about processing presupposition, on van der Sandt's account, as Bezuidenhout makes about processing her procedural meaning. For example, it doesn't make sense on van der Sandt's view to think that we can process a presupposition and only then look up a rule that assigns a certain function to the presupposition—binding a variable, say. We take this as an insight into the interplay of knowledge, problem solving and inference inherent in the construct of processing

³The cues are typically heterogeneous, partial, and potentially conflicting, so in general we have a problem of inference to the best explanation (in much the sense of Hobbs et al. (1993)). However, as we explore in detail in the book, and revisit in our conclusion to this reply, we do not think that the audience must recognize the speaker's communicative intention, at least as traditionally conceived in the Gricean program. Thus, we dispute that this inference necessarily requires deep knowledge or complex reasoning about the speaker's mental state.

in cognitive science. Simply put, when actions are governed by represented rules, then the way you process them is to look up the rules and apply them.⁴ AQ4

Ultimately, we are in agreement with Matthews (1991, 2003, 2006): we don't think the processing facts support any conclusions about the scope or content of linguistic knowledge. Instead, talk of knowledge of language simply gives us an abstract way of characterizing what a language user is able to do. We are sympathetic to Bezuidenhout's characterization of language processing as automatic and integrative, but her conception of grammar supposes that procedural mechanisms preclude declarative knowledge, and vice versa, whereas Matthews counsels us to see mechanism and knowledge as different levels of description, and thus completely compatible.

As it happens, explicit representations of presupposition do have a role to play in van der Sandt's theory: presuppositions can be resolved in qualitatively different ways that amount to giving the presuppositions different scopes in logical form (Kamp and Rossdeutscher 1994). Imagine that the speaker has just restarted a device, whose lights signal various faults. It's still not working. The speaker complains: AQ5

Exactly three lights came on again.

It's ambiguous what constraint 'again' imposes on the context here. On one interpretation, 'again' seems to take scope over 'exactly three': there must be some contextually established previous occasion where exactly three lights came on, though it need not have been the same three lights the speaker has just observed. On another interpretation, 'again' seems to take narrow scope: each of the lights in question must have come on before at some point, but perhaps at different times, and perhaps accompanied by others, so this could be the first time exactly three lights have come on. (Naturally, the hearer will typically know the relevant history and so be in a position to recognize which AQ6

⁴Indeed, results from theoretical computer science and artificial intelligence (AI) underscore how difficult it is to determine what's represented explicitly in a system just by looking at the system's function or behavior. It's true, as Bezuidenhout observes, that declarative rules must ultimately ground out in brute mechanism, on pain of regress. But Turing (1936) showed how to cut off the regress absolutely and definitively after a single round: with a universal machine whose input specifies an arbitrary mechanism and whose action is simply to simulate whatever mechanism is specified in the input. Von Neumann applied Turing's insight to the design of early general-purpose computers, and the idea stuck. That's why you update your computer today by downloading a new version of the operating system, not by installing a new chip. It remains standard to write general programs that take data structures representing courses of action as input and carry out the course of action represented. (Such programs are called interpreters.) Because of this, the ability to automatically execute the program of action associated with a symbolic data structure is central to the idea of representation in computer science (Newell and Simon 1976); it is the basis for describing AI systems as using represented knowledge to achieve their goals (Newell 1982). One important special case is the general paradigm of logic programming (Kowalski 1974), which casts logical statements as specifications of inference strategies. In computational logic, the general mechanism is resolution theorem proving (Robinson 1965), which interprets a statement $p \Rightarrow q$ as a procedural rule that infers q once p has been established. Interpreting presuppositions as instructions for constructing interpretations is an instance of this broader paradigm. In short, there's nothing incoherent about a system that follows represented rules, or that gives a procedural interpretation to grammatical representations. How the brain represents grammar, if at all, is of course an open empirical question, of central importance to neuroscience. But, as we shall see presently, we think the question poses the same kind of challenges for all of linguistic knowledge.

case applies.) Such variations in scope are of course ubiquitous in compositional semantics, where they are often taken to motivate systems of derivation and levels of representation within grammar that make scope explicit (see May 1985). If presupposition exhibits the same scoping behavior, it should presumably be modeled in analogous terms. As with speech act conventions, then, the interactions between presupposition and other aspects of compositional semantics provide a strong *prima facie* argument for viewing all of meaning as a part of a single system.

Finally, consider information structure. One role of information structure is to mark the alternatives implicitly under consideration in an utterance. That's what's happening in Dretske's example (Horn's 14b) on our view:

Clyde gave ME the tickets by mistake.

With this intonation, the alternatives under consideration involve Clyde giving the tickets to someone else. Clyde's mistake was not choosing the alternative he should have. Precisely because of the intricate interactions we find in such cases, we are inclined to account for them in terms of mutually constraining ambiguities resolved in context (here involving the alternatives associated with intonation and those imputed by the modifier 'by mistake'), and thus to emphasize the common roles of different kinds of meaning in interpretation.

Another role of information structure is to mark an utterance as offering an answer—perhaps a partial or indirect one—to some question under discussion. But it turns out that this gives us the wherewithal to capture key ingredients of Szabo's explanations of Grice's gas station and letter of recommendation examples. In the book, we treat the letter as a hint, with the audience left to draw their own conclusions about the strengths of the candidate. We still see some merits in our approach, but Szabo thinks it is insufficient. He thinks the letter communicates that the candidate is bad, and indeed, he thinks it does so in virtue of a convention that let the writer coordinate with his audience to get this message across. This is an interesting empirical dispute but not in itself a threat to our broader theory, as Szabo makes clear. After all, our book develops an explanation of the gas station case, similar to Szabo's, in terms of conventions.

The real challenge for us, Szabo suggests, is that the conventions that matter for interpreting the key cases are non-linguistic. They are part of our practices of helping out by solving problems and giving directions, part of our mutual expectations of collegiality in hiring and firing. These conventions do not belong in grammar, and therefore, Szabo argues, we still need a theory of communicative indirection, of a broadly Gricean character, in order to explain how interlocutors exploit extra-grammatical information to communicate.

But suppose Szabo's take on the data is correct: is grammar really silent about the content at issue? Szabo's social conventions seem to characterize how interlocutors link utterances to appropriate questions. As Szabo puts it,

The fact that the letter writer can expect her reader to pick up on her suggestion has much to do with the fact that it is common ground between them that the

5 purpose of the letter is to answer a particular question: 'Is the candidate qualified for the job?'⁵

But if the rules of language instruct the reader to retrieve this question under discussion, then the writer's suggestion is much more tightly linked to meaning and logical form than we typically expect in Gricean indirection.

10 Here, independently motivated linguistic approaches seem to be able to describe the key interpretive effects in much the same direction Szabo suggests. This capacity underscores the fact that the broader view of interpretation we argue for makes narrow views of semantics, and expansive characterizations of indirection in meaning, surprisingly problematic.

15 This is why we make the case for such an inclusive view of grammar in our book: the conventions of language are broader than research often acknowledges, but the conventions share important features and work together. We're glad to see our critics highlight the different takes philosophers and other cognitive scientists can bring to the issues. As their discussions illustrate, questions about the scope of meaning have far-reaching implications for philosophers' understanding of language, cognition and the social world.

Explanation in semantics

25 Horn, Szabo and Bezuidenhout also offer methodological reasons for distinguishing their interpretive devices from traditional semantics. They think that the alternative formulations allow theorists to give better explanations of why we have the conventions we do. We resist this suggestion. We think semantic rules, suitably understood, allow for all the explanations they give.

30 For example, Bezuidenhout convincingly shows that 'can' sentences sometimes are interpreted as questions, but other times are interpreted simultaneously as both questions and requests. This makes indirect requests different from direct requests; any theory has to come to grips with this. But our view of semantics allows us to. An indirect request updates the conversational record in two ways at once. It raises the question of whether an action is possible, and it imposes a preference for the addressee to do it. Asher and Lascarides (2001) offer a detailed exposition formalizing the dual role of indirect speech acts in dynamic semantics. Our view then, is that the ambiguity found in 'can' sentences is an ambiguity between a question interpretation and an indirect request interpretation. (The different presuppositions associated with the two readings will, as always, inform disambiguation.)

40 Horn—echoing Searle and Morgan—points out the natural connection between questions and requests that give indirect requests constrained, and thus, to some extent predictable, interpretations. But this fits with Lewis's theory of convention, on which we build. Lewis supposes that conventions arise

⁵Much the same might be said about Horn's treatment of the 'they say/I say' trope as appealing to a salient and contested issue p that the two clauses address from opposite viewpoints.

through historical patterns of motivation and precedent, which can give any convention a certain kind of partial explanation. Even if we don't share a convention for encoding some target meaning, such as an indirect request, we can always improvise. We might be able to start a dialog and eventually clarify our understanding of one another; we might just get lucky. To increase our chances, it makes sense to draw on relevant background knowledge, such as the natural connections among actions that Searle considers, and choose strategies that jump out as potential solutions to our coordination problem. As we succeed, we set precedents that eventually solidify into new conventions. In sum, for Lewis, the process of establishing conventions will generally lead agents to agree on salient strategies—just as we find in the inventory of possible indirect speech acts across languages.

In fact, Lewis's approach not only acknowledges that interpretive rules can be motivated by natural associations, it generalizes this line of thinking to all of semantics. Want a name for something new? Just reuse the name of something it reminds you of! We often do find words enveloped in networks of related meanings, as for example when we go from the base of a pillar, to the base of a triangle, the base of the heart, the base of a derived word form, data bases, military bases, the Republican base, and finally (in baseball, of course), home base. We agree with Horn that it's important to have an analytic continuum to make sense of the uncertain and evolving topology of such networks of meaning. But we're not clear how appeal to Gricean implicatures or conventions of use will extend to such more clearly semantic cases. Lewis's framework, by contrast, allows for degrees of convention, depending on how confidently and widely the solution to a coordination problem is shared across the relevant community. Among the weakest conventions, we find the tentative and idiosyncratic precedents that a particular speaker and hearer might be using just to interpret their subsequent conversation with one another; among the strongest, we find familiar meanings shared by a wide community of speakers in regular use.⁶

Finally, we don't agree with Szabo that postulating ambiguity is giving up. That is certainly the conventional wisdom, as distilled for example in 'Grice's razor,' the idea that pragmatic explanations making varied use of univocal meanings are better than explanations involving ambiguities. But the conventional wisdom underestimates how few ambiguities are really accidental. For example, in many cases, we can predict ambiguity through the interaction of independently motivated grammatical principles.⁷ But there's also the possibility of

⁶This point is independent of our specific account of alleged implicatures and our particular view of linguistic meaning. As long as language combines improvised meaning with the perpetuation of precedents, researchers must expect pervasive polysemy. Millikan (2005, 192–202) develops this argument in detail—though her assumptions and her conclusions are quite different from ours.

⁷See Geurts (2006) for an account of that explains the asymmetry of scalar inferences with numerals through a productive interaction between a basic reading involving exact quantity and a general type-shifting operation of productive semantic coercion involving existential quantification.

5 making sense of ambiguity retrospectively, by observing the close affiliations among independent meanings, and hypothesizing historical processes that led one convention to piggyback off another—as in the case of ‘base’ above. We have no doubt that such explanations, weak though they may be, are often the right way to approach the regularities we observe in meaning.

Final thoughts

10 In our discussion so far, we have tried to bring out the empirical and theoretical consequences of the reconceptualization and criticism our book offers: We want our readers to think differently about semantics, pragmatics and interpretation. But we are perhaps not so broad in our attack as our critics take us to be.

15 We are not committed, as Bezuidenhout suggests, to there being no systematic theory of metaphor—only that general interpretive principles, like Grice’s general principles of rationality, have little to say in settling the point of a metaphor. We agree with Szabo that the speaker sometimes has a special authority over the point of her own metaphor, but we see this as consonant with our characterization of metaphor as an invitation, extended by the speaker to the hearer, to follow a certain strategy in exploring the imagery of an utterance.⁸

20 And we have many ways to respond to Horn’s illuminating but not clearly conclusive survey of indirect meaning in law. We disagree with Horn about which, if any, of the cases represent indirection; we see much more as encoded than he does. But we don’t see why the law should treat all misleading uses of encoded meaning uniformly. It’s one thing to assert something false. It’s something else—even on our theory—to presuppose something false, to represent a truth as answering a question it does not, or otherwise to obscure or conceal what one is doing in making an utterance. Thus, we don’t take Horn’s discussion to establish the Gricean account of indirection in cooperative conversation; the examples simply illustrate that the conventional meanings of utterances entail a range of different requirements for sincere speakers. People can and do distinguish among these requirements, even though the interpretive regularities are conventional in all the cases.

30 So what is our target in the book? It’s a longstanding intellectual thread, running through Grice’s work on implicature, neo-Gricean work on generalized conversational implicature, Relevance Theory’s explicature, theories of free enrichment in pragmatics, and many others. The common idea is that language use is governed by general principles that reinterpret grammatically specified

⁸Szabo’s metaphorical misinterpretation concerns ‘All the world’s a stage.’ For Szabo’s speaker, life is burdened with the predictability of theater. The hearer who imagines everyone’s actions on display misses the speaker’s point. To us, the hearer’s failure here seems quite analogous to a failure to pick up on a practical invitation. For example: the host of a party invites you to come dressed as something scary. You wear jeans and a t-shirt. You are ‘the terrifying absurdity of everyday existence.’ Your terror may be real, but you’ve failed to respond to the spirit of the invitation: you’ve missed the point. Extending an invitation inevitably involves a kind of authority.

5 meanings and thereby associate alternative speaker meanings to utterances in context. This notion of reinterpretation may, in the end, play a relatively small part in the contribution of Grice's philosophical work, neo-Griceans' linguistic work, or psychological work in the Relevance Theory framework. We're grateful to our critics for helping to point out the many different ways theorists have approached particular aspects of interpretation in these different frameworks—
10 ways that escape our criticisms of general reinterpretation and so offer instructive counterparts to the specific linguistic research we survey. But we remain steadfastly opposed to reinterpretation.

Our critics generally question the significance of rejecting reinterpretation, however. They argue that the theoretical machinery we are keen to banish
15 will inevitably figure in a theory of disambiguation. Horn characterizes disambiguation, in cases of possible temporal progression in discourse, as cases of cooperative intention recognition, which correspondingly require speakers to attend to 'the requirements of clear communication and desired communicative effects.' Bezuidenhout characterizes disambiguation, in cases of possible indirect
20 speech acts, as discarding grammatically specified meanings, and delivering different meanings in their place, based on speakers' 'language-independent understanding' of their interactions with one another. Szabo, too, worries that, in accommodating the need for intention recognition in disambiguation, we risk 'complete surrender.'

25 Naturally, we take a very different view. In the book, we try to outline some of the ways to resist a view of disambiguation grounded in Gricean intentions and Grice's Cooperative Principle. For example, we sketch how speakers' intentions in contributing to conversation might simply link speakers to meanings that prevail in the community without any of the self-conscious self-reference
30 of Gricean communicative intentions. We sketch how speakers' intentions in contributing to conversation might be produced and recognized by exploiting shallow cues derived from empirical regularities in language use. We sketch how speakers' intentions in contributing to conversation might support public inquiry without requiring collaboration. We sketch how speakers' intentions in
35 contributing to conversation might even underwrite the attribution of content to speakers that the speakers themselves might not endorse or even recognize.

Even were it to turn out that disambiguation involves recognizing a speaker's intention on our view, we think these ideas give teeth and substance to our departure from Grice. After all, they leave disambiguation in semantics on
40 a par with disambiguation in syntax or morphology. We are far from having settled—or even spelled out—all the considerations involved in distinguishing among the theoretical possibilities. However, we think the view of disambiguation we defend is much more in what Szabo calls the Lockean tradition than the Gricean one.

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