Communication and Variance

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1 Introduction

According to a standard assumption in semantics, knowing the meaning of a sentence requires knowing its truth-conditions.[1] For example, it is assumed that if Anna utters 'grass is green', knowing the meaning of that sentence as she used it requires knowing that, necessarily, that sentence as Anna used it is true if and only if grass is green; that knowing the meaning of 'I like apples' as used by Anna on a certain occasion requires knowing that, necessarily, that sentence as Anna used it is true if and only if Anna likes apples; etc.[2] In conjunction with a standard picture of communication, according to which successful communication through literal assertoric utterances is typically achieved thanks to our shared knowledge of the meaning of the uttered sentences, the standard assumption in semantics entails: (a) that the participants in episodes of successful communication involving literal asssertoric

[1] This assumption is often stated in semantics textbooks, sometimes under stronger formulations. For instance, Heim and Kratzer (1998) start their famous textbook by stating "To know the meaning of a sentence is to know its truth-conditions" (p.1). Portner (2005) also takes knowledge of truth-conditions to be the starting point for semantics: "The knowledge of meaning involves (at least) knowledge of the conditions under which a sentence is true, and those under which it's false" (p. 13). Larson and Segal (1995) motivate similar assumptions in their initial discussion of the relation between meaning and truth (pp. 5–7).

[2] I say 'necessarily' because mere material equivalences between the truth of a sentence as used in certain circumstances and the truth of a proposition are not enough to capture the idea that to know the meaning of a sentence is to know its truth-conditions. For example, given that snow is white and grass is green, if 'grass is green' as used in circumstances *c* is true if and only if grass is green, it follows that 'grass is green' as used in circumstances *c* is true if and only if snow is white, yet we would hardly count someone as knowing the meaning of 'grass is green' as used in circumstances *c* due to her belief that 'grass is green' as used in circumstances *c* is true if and only if snow is white. Necessary equivalences between the truth of a sentence and the truth of a proposition are thus better suited to be what a language user must know if she is to know the meaning of a sentence. Some people may worry that such necessary equivalences are implausibly strong; surely, they may think, there are possible worlds in which use patterns for words like 'green' or 'grass' are very different from the actual ones, in which case such necessary equivalences won't hold. This should not be a cause of concern. That somebody believes that, necessarily, 'grass is green' as Anna used it *in such and such circumstances* (e.g. in possible world *w* at time *t*) is true if and only if grass is green does *not* entail that that person believes that, necessarily, 'grass is green' *as used in any possible circumstances* is true if and only if grass is green. For example, it is compatible with what that person believes that, necessarily, "grass is green" as Anna used it *in different circumstances* (e.g. a possible world in which people's gardens are adorned with marijuana plants) is true if and only if marijuana is green. Some theorists may prefer to think of language users as having beliefs about *utterances* performed in given circumstances rather than about sentences as used in given circumstances. The choice between those two alternatives does not make a difference for present purposes.

utterances typically have (implicit) beliefs about the truth-conditions of the uttered sentences, and (b) that they have the same such beliefs.[3]

For example, suppose John wants to know what kind of food Carla likes, and Anna wants to inform him that Carla likes quesadillas. According to the standard picture of communication plus the standard assumption in semantics, Anna will utter a sentence which, given the circumstances in which she uses it, she knows to be true if and only if Carla likes quesadillas.[4] For instance, she may utter 'Carla likes quesadillas'. Normally, according to the standard picture, if communication is successful John will come to know that Anna wanted to inform him that Carla likes quesadillas on the basis of Anna's utterance. He will come to know this partly on the basis of his knowledge that, given the circumstances in which the conversation takes place, the sentence Anna uttered is true if and only if Carla likes quesadillas.[5] And if both Anna and John know that 'Carla likes quesadillas' is true if and only if Carla likes quesadillas, it follows that they both *believe* (at least implicitly) that 'Carla likes quesadillas' is true if and only if Carla likes quesadillas.

This paper argues that the participants in a linguistic interaction rarely have the same beliefs about the truth-conditions of the sentences uttered in the course of their interaction. More precisely, this paper argues for *Variance*, the thesis that, for most linguistic interactions and most sentences used in those interactions, there is no proposition such that all the participants in the interaction believe that, necessarily, the sentence as it was used is true if and only if that proposition is true.

[3] These consequences follow given the assumption that knowing a proposition entails believing it, at least implicitly. Given this assumption, if A and B know the meaning of sentence S as used in certain circumstances, and knowing the meaning of S as used in those circumstances requires knowing that, necessarily, S as used in those circumstances is true if and only if P is true, it follows that A and B will both believe that, necessarily, S as used in those circumstances is true if and only if P is true.

[4] For the sake of readability, I will often omit the word 'necessarily' and sometimes I will omit talk about the circumstances in which a sentence is used when I characterize someone's beliefs about a sentence's truth-conditions. However, it should be understood that the beliefs I am considering involve necessary equivalences (as opposed to merely material equivalences) between the truth of a sentence *as used in given circumstances* and a proposition.

[5] Defenders of the standard picture normally add further requirements for successful communication. For example, they may claim that successful communication between Anna and John normally requires not only that they both know that 'Carla likes quesadillas' as Anna used it is true if and only if Carla likes quesadillas, but also that they both know that the other knows this, that they know that they know it, and so on. Without intending to do exegesis here, it would be fair to attribute a version of the standard picture of communication to philosophers in the tradition started by Grice (1989a,b)—a tradition that includes Strawson (1970, 1964), Schiffer (1972), Bach and Harnish (1979) and, to some extent, Stalnaker (1974). According to philosophers in that tradition, in making an assertoric utterance a speaker means a proposition (or propositions), and the audience understands the utterance only if she recognizes the proposition(s) the speaker meant. If at least one of the propositions the speaker meant (in Gricean terms, the proposition the speaker *said*) determines the truth-conditions of the uttered sentence, we should expect that if the audience understands the speaker's utterance, then speaker and audience believe the uttered sentence to have the same truth-conditions. Heck (2002, pp. 6–8), Evans (1982, p.22), and Dummett (2010) have attributed versions of the standard picture of communication to Frege. See also Portner (2005, pp.21-2) for an endorsement of the picture sketched in this paragraph.

Variance is a surprising thesis. If it is true, it puts pressure on the standard assumption that knowing the meaning of a sentence (as used in given circumstances) requires knowing its truth-conditions, and on the idea that we can know what other people believe on the basis of the sentences they utter. Here I will focus on the consequences of *Variance* for the standard picture of communication. Provided that successful communication through literal assertoric utterances is as frequent as it intuitively seems, if the participants in a linguistic interaction seldom have the same beliefs about the truth-conditions of the sentences uttered in the course of the interaction, successful communication cannot be typically achieved due to shared knowledge of the truth-conditions of the uttered sentences (or even to shared beliefs about those sentences' truth-conditions). Nor can successful communication typically require that we know exactly what the speaker intended to communicate through her utterance—if, for example, John doesn't believe that 'Carla likes quesadillas' is true if and only if Carla likes quesadillas, he will have little reason to believe that Anna intended to communicate to him that Carla likes quesadillas through her utterance of 'Carla likes quesadillas'. The second aim of this paper is to outline an account of communicative success, given the truth of *Variance*.

The structure of the paper is as follows. I start by arguing for *Variance* and stating some clarifications about that thesis (section 2). Then I examine some strategies for resisting the case for *Variance* appealing to the notion of common ground and to social externalism, respectively (chapter 3). I argue that those strategies fail. Towards the end of the paper (section 4) I outline a pluralistic account of communicative success that does not appeal to shared beliefs about the truth-conditions of the sentences uttered in the course of a conversation. I conclude by mentioning some of the consquences of *Variance* for a debate between contextualists and invariantists, and for certain puzzles about speech reports (section 5).

2 The case for Variance

Variance is the thesis that the participants in a linguistic interaction rarely have the same beliefs about the truth-conditions of the sentences they utter in the course of their interaction. More precisely, it is the thesis that for most sentences used in most linguistic interactions, there is no proposition such that all the participants in the interaction believe that, necessarily, the sentence as it was used in the interaction

is true if and only if that proposition is true.

Here is the main point in favor of *Variance*. For most utterances of declarative sentences, there are enormously many—sometimes, uncountably many—different truth-conditions any language user could easily have believed each of those uttered sentences to have, none of which is more natural or intrinsically more eligible than the rest. Given the vast number of equally eligible truth-condition candidates each of those sentences has, and absent further explanation, it would be extremely unlikely for any two language users—including the participants in the conversation in which the sentence is uttered—to believe any one of those sentences to have the exact same truth-conditions. Which is to say that *Variance* is very likely.[6]

For example, suppose Anna utters

(1) Carla likes quesadillas

in conversation with John, and that generally speaking Anna calls something a quesadilla just in case it is a folded tortilla filled with cheese. It is not enough for Anna to count something as a quesadilla that it be filled with just *any* amount of cheese. For example, it would not suffice for Anna to count something as a quesadilla that it contained only a very tiny, almost imperceptible amount of cheese, nor that it contained so much cheese that it bursts the tortilla open: quesadillas, according to Anna, must have an amount of cheese within a certain range.

Suppose that, as a matter of fact, Anna believes that all and only folded tortillas with between 20.5 and 40.5g of cheese are called 'quesadillas'; as a result, she believes that (1) is true if and only if Carla likes tortillas filled with between 20.5 and 40.5g of cheese. There is nothing special about having between 20.5 and 40.5g of cheese that makes it especially easy for Anna to believe that things are called 'quesadillas' just in case they have that quantity of cheese. Had Anna been slightly differently attuned to the relevant evidence, or had that evidence been slightly different, she could just as easily have believed that things are called 'quesadillas' just in case they have between 20 and 40g of cheese, just in case they have between 19.5 and 39.5g of cheese, and so on. As a result, there are many truth-

[6] See Dorr and Hawthorne (2014) for a related argument to the effect that, if the propositions expressed by most sentences in ordinary language depend on microphysical facts, they depend very sensitively on those facts. See also Schiffer (1981a) for a related argument to the effect that the content of an utterance can't include reference to specific modes of presentation, and Buchanan (2010) for a related argument against Gricean accounts of speaker meaning. I intend to discuss the differences between those arguments and the one I present here in future work.

conditions Anna could easily have believed (1) to have. She could easily have believed that (1) is true if and only if Carla likes folded tortillas filled with between 20 and 40g of cheese; that it is true if and only if Carla likes folded tortillas filled with between 19.5 and 39.5g of cheese; etc. More generally, for any quantity of cheese in a certain range, Anna could easily have believed that (1) is true if and only if Carla likes folded tortillas with that quantity of cheese.

Given the vast number of quantities of cheese such that Anna could easily have believed that (1) is true if and only if Carla likes tortillas filled with that quantity of cheese, it would be extremely unlikely for John to also believe that (1) is true if and only if Carla likes folded tortillas filled with *the same* quantity of cheese. Absent further explanation, there must not be any quantity of cheese such that both Anna and John believe that (1) is true if and only if Carla likes tortillas filled with that quantity of cheese.

In the example, the differences in the truth-conditions Anna and John may believe (1) to have are determined by differences in the quantities of cheese they may require something to have in order to call it a 'quesadilla'. Nothing relies on that particular feature of the example. There are many different dimensions on which the application of the word 'quesadilla' depends, and any of them would have been just as good: differences in the truth-conditions Anna and John believe (1) to have could be determined by differences in the shape they require things to have in order to call them 'quesadillas', by differences in those things' sizes, etc.

Nor does the example rely on features specific to the word 'quesadilla'. Observations of the kind I just presented hold for (but are not limited to) any sentence involving terms whose application depends on the properties an object has along one or more continuous dimensions. Suppose for example that 'F' is a predicate of that kind and 'a' is a proper name. For any language user, there will be a huge number of extremely similar and equally natural (or otherwise eligible) properties—each corresponding to a slightly different cutoff point along one or more of the dimensions on which the application of 'F' depends—such that that language user could easily have believed that 'a is F' is true if and only *a* (the object denoted by 'a') has that property. If, for example, a language user believes that 'F' expresses the property corresponding to the cutoff point x along one of the dimensions relevant to the application of 'F', she could just as easily have believed that 'F' expresses the property corresponding to the slightly different cutoff point x', that it expresses the property corresponding to the slightly different cutoff point

x'', etc. Given the huge number of properties any language user could easily have taken 'F' to express, it is extremely unlikely for any two language users to believe that 'a is F' is true if and only if *a* has the exact same one of those properties.[7] The same applies, *mutatis mutandis*, to terms that express relations rather than properties.

If there is some property 'F' semantically expresses, say, F-ness, that property will itself be just one among the huge number of extremely similar and equally natural properties that could easily have figured in any language user's beliefs about the truth-conditions of 'a is F'. For F-ness will itself correspond to some particular cutoff point in the dimensions relevant to the application of 'F', and there will be a huge number of properties whose cutoff points are extremely close to and just as natural as the one determined by F-ness, each of which could easily have figured in any language user's beliefs about the truth-conditoins of 'a is F'. Thus, it is no more likely that the participants in a conversation all believe that 'a is F' is true if and only if *a* is F (i.e. has F-ness) than that they all believe the slightly different proposition that 'a is F' is true if and only if *a* is $F^\star$, where $F^\star$ is a property that determines a slightly different cutoff point than F-ness along some dimension relevant to the application of 'F'.

For example, suppose that there is a property the expression 'is a quesadilla' semantically expresses, say, the property of being a quesadilla. That property will be just one among a huge number of extremely similar and equally natural properties any language user could easily have believed 'is a quesadilla' to express. For the property of being a quesadilla will itself correspond to some particular cutoff point in the dimensions relevant to the application of 'is a quesadilla'—e.g. size, quantity of cheese, and so on—and there will be a huge number of properties whose cutoff points along those dimensions are extremely close to and just as natural as the one determined by the property of being a quesadilla, each of which any ordinary language user could easily have believed 'is a quesadilla' to express. Thus, it is no more likely that any two language users both believe that 'is a quesadilla' expresses the property of being a quesadilla than that they both believe that 'is a quesadilla' expresses the slightly different property of being a quesadilla*—where the property of being a quesadilla* determines a slightly different cutoff point than the property of being a quesadilla along some dimension relevant to the application of

[7] It is not required for observations of this kind to go through that the dimensions on which the application of a term depends be continuous. All that is required is that there are enough points along those dimensions for there to be a large number of very similar and equally natural properties (all with a plausible claim to be the one expressed by 'F'), each corresponding to slightly different cutoff points along those dimensions.

the word 'quesadilla'. In turn, it is no more likely that any two language users believe that the sentence 'q is a quesadilla' (where 'q' is a proper name) is true if and only if q is a quesadilla than that they all believe that 'q is a quesadilla' is true if and only if q is a quesadilla*. Nor is it more likely that the participants in a conversation all believe that 'Carla likes quesadillas' is true if and only if Carla likes quesadillas (i.e. things with the property of being a quesadilla) than that they all believe that 'Carla likes quesadillas' is true if and only if Carla likes quesadillas*, (i.e. things with the property of being a quesadilla*).[8] I will soon discuss more examples illustrating the variety of sentences for which observations of this kind hold, but first I want to make two clarifications.

First. I have written as if the truth-conditions a language user believes a sentence to have divide the totality of logical space between the possible worlds in which the sentence is true and those in which it is not. In my discussion of the example, I assumed that ordinary beliefs about a sentence's truth-conditions can be characterized through the use of (more or less) precise vocabulary (e.g. 'between *20 and 40g* of cheese', etc.), and in the generalization of that kind of example I assumed that the properties that could figure in somebody's beliefs about a sentence's truth-conditions made sharp cutoff points along some relevant dimension. Call this the *precision assumption*.

Some people may deny that the truth-conditions ordinary speakers believe sentences to have divide logical space in the way the precision assumption requires, and question the case for *Variance* on that basis. According to those people, the truth-conditions people ordinarily believe a sentence to have are instead vague. There is no generally accepted treatment of vague propositions, but the appeal to vague propositions does not make a difference to the case for *Variance*. In particular, it is compatible with the case for *Variance* that in the schema *A believes that, necessarily, S is true iff P is true* (where 'A' refers to an agent and 'S' refers to a sentence as used in given circumstances), P be a vague proposition. All the case for *Variance* requires is that for most sentences there are very many equally natural *vague* truth-conditions any language user could easily have believed each of those sentences to have, given which it would be extremely unlikely for any two language users—including the participants in the

[8] Considering sentences from a language other than English may help. For example, the property of being green determines a particular cutoff point along the dimensions relevant to the application of the Spanish word 'verde' (usually translated as 'green'), and there are many other properties whose cutoff points are extremely close to (and just as natural as) the one determined by the property of being green. Given the huge number of such properties, it is no more likely that the participants in a conversation in Spanish all believe that the sentence 'el pasto es verde' is true if and only if grass is green, than that they all believe that 'el pasto es verde' is true if and only if grass is green*, where the property of being green* determines a slightly different cutoff point than the property of being green along some dimension relevant to the application of 'verde'.

conversation in which the sentence is uttered—to believe any of those sentences to have the exact same (vague) truth-conditions.[9]

Second. Call *propositions* of the form *S is true iff P*—where '*S*' refers to a sentence as used in certain circumstances and '*P*' is a schematic letter to be replaced by a sentence that expresses a proposition—truth-biconditionals about *S*. *Variance* is the thesis that, for most sentences used in most linguistic interactions, there is no truth-biconditional about any of those sentences that all the participants in the interaction believe. As such, one way for *Variance* to be true is for the participants in an interaction to ordinarily believe different truth-biconditionals about the sentences they utter.

If *Variance* were true in that way, that would already be problematic for the standard picture of communication. It would entail that successful communication is not normally achieved thanks to shared beliefs in truth-biconditionals concerning the sentences uttered in the course of a conversation, and that we can't normally know what someone intended to communicate on the basis of our beliefs about the truth-conditions of the sentences she utters. Yet to think that *Variance* is true because the participants in a conversation ordinarily believe different truth-biconditionals about the sentences they utter may concede too much to advocates of the standard picture. As I explain in what follows, observations of the kind I presented above support the stronger thesis that people do not usually believe *any* truth-biconditionals about sentences like (1) in the first place.

Take again Anna's utterance of (1)—'Carla likes quesadillas'. I said above that there is a huge number of truth-biconditionals about (1) anyone could easily have believed: that (1) is true if and only if Carla likes folded tortillas filled with between 20 and 40g of cheese, that it is true if and only if Carla likes folded tortillas filled with between 20.5 and 40.5g of cheese, and, more generally, for any quantity of cheese in a certain range, that (1) is true if and only if Carla likes folded tortillas filled with that quantity of cheese. However, given how similar those truth-biconditionals are to one another, it is very unlikely that the evidence available to someone who hears Anna utter (1) will significantly support a

[9] Note that appealing to vagueness in the identity conditions of vague truth-conditions will not take defenders of the standard picture of communication very far. Strictly speaking, all we need in order to reject the standard picture is that, for most sentences, there is a large enough number of equally natural (or otherwise eligible) yet *not definitely identical* truth-conditions any language user could easily have believed each of those sentences to have. Given the huge number of not-definitely-identical truth-condition candidates each of those sentences has, it would be extremely unlikely for any two language users to *definitely* have the same beliefs about those sentences' truth-conditions. If this is true, then the standard view of communication would predict that definite cases of successful communication are extremely rare. Thanks to Jim Pryor and Chris Scambler for discussion.

belief in one of those truth-biconditionals over a belief in another. Most likely, anyone who hears Anna utter (1) will be uncertain as to which among an enormous number of truth-biconditionals about (1) in fact holds. Such a person will give very similar credence to a huge number of truth-biconditionals about (1), and her credence in each of those truth-biconditionals will be too low for that person to count as believing any one of them.

For example, suppose John is entertaining the following propositions:

(2) `(1) is true if and only if Carla likes folded tortillas filled with between 19 and 39g of cheese`;[10]

(3) `(1) is true if and only if Carla likes folded tortillas filled with between 19.5 and 39.5g of cheese`;

(4) `(1) is true if and only if Carla likes folded tortillas filled with between 20 and 40g of cheese`;

(5) `(1) is true if and only if Carla likes folded tortillas filled with between 20.5 and 40.5g of cheese`;

(6) `(1) is true if and only if Carla likes folded tortillas filled with between 21 and 41g of cheese`.

Given how similar (2)–(6) are to one another, it is unlikely that John's evidence significantly supports a belief in one of them over a belief in another. Most likely, John's credence in some of those propositions will be higher than his credence in others, but even his highest credence in one of those propositions will be too low for him to count as believing that proposition. For example, John may have credence 0.25 in (4), credence 0.2 in each of (3) and (5), and credence 0.175 in each of (2) and (6). Though in such a situation John would be more confident in (4) than in any other of (2)–(6), he would still not be confident enough to count as believing (4). In such situation, John would not believe any of (2)–(6).

When it comes to truth-biconditionals about sentences like (1), people usually are in a position very much like John's. Given the huge number of extremely similar truth-biconditionals about a sentence like (1) that any person could have believed, it is very unlikely that that person's evidence will support

[10] Sentences written in `this` font stand for propositions.

a belief in any truth-biconditional about that sentence over a belief in one of the others to a significant degree. Ordinarily, people will be undecided as to which of a huge number of very similar truth-biconditionals about a given sentence holds, which will make even their highest credence in one of those biconditionals barely significant. So, provided that people don't usually believe truth-biconditionals they barely have evidence for, it is very unlikely they will believe any truth-biconditional about any of a majority of the sentences uttered in the course of a conversation.

Call the thesis that the participants in a conversation rarely believe any truth-biconditionals about the sentences uttered in the course of the conversations they take part in *Uncertainty*. *Uncertainty* entails *Variance*, but the converse does not hold. I believe that *Uncertainty* is true, but for the purposes of this paper I am willing to grant to objectors the assumption that people ordinarily believe truth-biconditionals about the sentences uttered in the course of the conversations they take part in. The discussion should still be of interest insofar as many semanticists and philosophers make that assumption, and that assumption is crucial to standard ways of understanding the subject matter of semantics. Except for some brief remarks in section 4, I will not discuss *Uncertainty* for the rest of this paper.[11]

That ends the clarifications. I said above that, for most sentences used in most interactions, there is an enormous number of truth-conditions any language user could easily have believed that sentence to have. I used this kind of consideration to support my claim that it is very unlikely that any two language users believe any one of those sentences to have the same truth-conditions. Call considerations of that kind *considerations about multiple candidates*. The rest of this section illustrates the wide variety of sentences for which considerations about multiple candidates hold, including both context-dependent and context-independent sentences. *Variance* gets support from the fact that considerations about multiple candidates hold for all those sentences.

2.1 Context-dependent sentences

Many sentences are widely recognized to be context-dependent, in that their truth-conditions depend on contextual factors. Examples include sentences like 'Carla is here', 'John is rich', and 'Anna is tall'. From a purely formal perspective, the linguistic meaning of such sentences is often represented as a function from a context of utterance to a possible-worlds proposition (Kaplan 1989). In turn, contexts

[11] Thanks to Cian Dorr, Ian Grubb, and Stephen Schiffer for helpful discussion of these issues.

of utterance are represented as sequences of values for the various parameters a sentence's content—i.e. the proposition it expresses—could depend on. The most common parameters are an agent, a possible world, and a time (Kaplan 1989). Other parameters philosophers and linguists postulate in the formal analysis of natural language constructions include: domain restrictions (Stanley and Szabó 2000), standards of knowledge or justification (DeRose 1992), optional complements for adjectives like 'ready' (Bach 1994), etc. A sentence as interpreted from a context of utterance c is true (at a possible world) if and only if the proposition resulting from providing that sentence's linguistic meaning with c is true (at the world in question).

Contexts of utterance understood as sequences of values for certain parameters should not be conflated with the concrete circumstances in which a sentence is uttered.[12] In most concrete circumstances in which an utterance takes place, there is a huge number of equally natural or plausible possible values for the different parameters that determine the truth-conditions of a context-dependent sentence, each of which corresponds to a different context of utterance formally understood, and each of which determines different truth-conditions when given as input to the sentence's linguistic meaning. Thus, in most circumstances, there will be a huge number of non-equivalent, equally natural or plausible, truth-conditions a language user could easily believe the sentence to have. Given the vast number of such truth-conditions, it would be extremely unlikely that any two speakers believe the sentence to have exactly the same ones.

The following examples illustrate this point. What the examples show is that there is a wide variety of context-dependent sentences for which considerations about multiple candidates hold. In turn, the variety of context-dependence sentences for which considerations about multiple candidates hold supports *Variance*.

Location adverbs. The contextual parameter that determines a denotation for a location adverb (e.g. 'here' or 'there') is usually taken to be a location—i.e. a spatial region. For most utterances of sentences in which those adverbs occur, there are enormously many (and perhaps uncountably many)

[12] Though Kaplan (1989) introduced a notion of a proper context that some may confuse with a concrete circumstance of utterance, Kaplan himself distinguished contexts of utterance understood as sequences of values from concrete circumstances in which a sentence is uttered. See MacFarlane (2014, 2005), Predelli (2013) for elaboration on the distinction between contexts of utterance understood as sequences of parameters and concrete circumstances in which a sentence is uttered. See Vision (1985), Predelli (1998), Cohen (2013), Michaelson (2014) for discussion and objections to Kaplan's notion of a proper context.

different spatial regions that could plausibly be given as values to the location parameter of the uttered sentence. Together with the linguistic meaning of the uttered sentence, those different spatial regions determine different truth-conditions for that sentence. Thus, given the vast number of different truth-conditions the uttered sentence could have, it is extremely unlikely that any two language users believe it to have exactly the same truth-conditions.

For example, suppose Anna is talking to John on the phone and hears him say 'Carla is here'. Because earlier Anna agreed to meet with John outside of Great Jones cafe, Anna believes that 'Carla is here' as John used it is true if and only if Carla is somewhere outside the entrance to Great Jones. Now, there are many areas that could count as outside the entrance to Great Jones: the area that extends two meters outside the entrance, the area that extends three meters outside the entrance, the area that extends four meters outside the entrance, and anywhere in between (among others). Since none of those regions is a more natural or plausible referent for 'here' than the others, it is unlikely that there will be some region such that both Anna and John believe that 'Carla is here' as John used it is true if and only if Carla is in *that* region.

Gradable adjectives. One fruitful line of research in linguistics analyzes the positive form of gradable adjectives (e.g. 'tall', as opposed to 'tall*er*') as a relation between the degree to which an object possesses the gradable property measured by the predicate and a contextually determined standard of comparison (See Cresswell 1977, Heim 2000, Kennedy and McNally 2005, Kennedy 2007). For example, the predicate 'tall' is taken to express the property of having a degree of tallness that is at least as great as a contextually determined standard of tallness; the predicate 'expensive' is taken to express the property of having a degree of cost that is at least as great as a contextually determined standard of cost; etc. For any gradable adjective, there are many (in fact, uncountably many) cutoff points along the scale of the property they measure, such that objects that have the property to at least as great a degree as the cutoff count as instances of the predicate.[13] Given the vast number of contextual standards that

[13] According to Kennedy (2007, section 3), this is not true of so-called "absolute" gradable adjectives, which Kennedy takes to come with fixed standards. For example, according to Kennedy, in order for an object to fall in the extension of 'impure' it suffices that it has *some* minimal degree of impurity which remains constant throughout all contexts; in order for an object to fall under the extension of 'straight', it must be completely straight; etc. I'm skeptical of Kennedy's claims: if my only purpose is to drink water that won't poison me, I will be willing to take an utterance of 'that water is pure' to be true even if the water in question has one milligram of sodium, but I will be less willing to take a similar utterance to be true in the context of a delicate chemical experiment. Of course, it might be that the range of acceptable standards for absolute gradable adjectives is more constrained than the range of acceptable standards for tallness or expensiveness, but there are reasons to think that the standards for absolute gradable adjectives can change with context nevertheless. I hope to discuss Kennedy's

could plausibly determine the extension of any gradable adjective in a concrete situation in which that adjective is used, it is unlikely that any two language users coincide in taking the exact same standard to determine the truth-conditions of sentences involving that adjective. For example, it is unlikely that there is any standard of tallness such that both Anna and John believe that 'Carla is tall' as Anna used it is true if and only if Carla has a degree of tallness above that standard.

Incomplete predicates. Consider the predicate 'is ready'. The truth-conditions of sentences in which 'is ready' occurs seem to depend on some contextually-determined parameter, such as an event or an action that the predicate's subject is ready for. Or take the verb 'arrives'. The truth-conditions of utterances in which 'arrives' occurs seem to depend on a contextually-determined location at which the verb's subject arrives.

Predicates like 'is ready' and 'arrives' are sometimes called *incomplete*.[14] Other examples are 'finished' and 'prefers'. Partee (2004) claims that 'local', and 'approaches' are also incomplete, since the truth-conditions of sentences in which they occur depend on a contextually determined location. Prior (1985) and Choi (2008) argue that dispositional predicates such as 'is fragile' or 'is soluble' are also incomplete, since the truth-conditions of sentences in which they occur depend on contextually determined background-conditions under which the subjects of the dispositional predicate would exhibit the disposition's characteristic manifestation—for example, the contextually-determined background conditions relevant to the truth-conditions of 'glass is fragile' may include the temperature (or range thereof) at which hitting glass with a light force would break it.

In my discussion of location adverbs I explained how in most cases there will be many different locations relevant to the truth of a sentence involving such adverbs, and that the huge number of those locations makes it unlikely that two speakers would take the exact same location to play a role in determining the truth-conditions of sentences in which location adverbs occur. Similar considerations apply to other contextually determined elements on which the truth-conditions of a sentence involving incomplete predicates may depend.

Here is my conclusion from the discussion so far. I offered various examples of context-dependent

arguments elsewhere.

[14] As far as I know, the first author to call these predicates incomplete was Bach (1994). I think the name 'incomplete predicate' seems too general to capture what is special about these predicates, but I will continue to refer to those predicates in that way.

sentences for which considerations about multiple candidates hold. This supports my claim that considerations about multiple candidates hold for a great variety of sentences, which in turn supports *Variance*. Before continuing, I should note that even if considerations of multiple candidates held for only one of the three kinds of sentences I discussed in this subsection (say, sentences involving gradable adjectives), that would be enough to put pressure on the standard picture of communication. For it would show that there is a great number of seemingly normal interactions (e.g. interactions involving utterances of sentences involving gradable adjectives) in which communication is not effected thanks to shared beliefs about the truth-conditions of the sentences uttered in the course of the interaction.

2.2 Context-independence

The case for *Variance* is not limited to utterances involving context-dependent expressions. Anna's utterance of 'Carla likes quesadillas' already illustrates this, but I want to offer two more examples before moving on.

Suppose Anna and John are discussing Carla's hobbies and Anna utters:

(7) Carla runs.

A word like 'runs' is not usually taken to be context-sensitive; nevertheless, there are many similar, equally natural, truth-conditions any language user could easily have taken (7) to have. For example, different people may disagree about the speed at which someone must move in order for her activity to be called 'running' (as opposed to 'jogging'), and this will result in their having different beliefs about (7)'s truth-conditions.[15] Furthermore, people may even disagree on whether an activity is to be called 'running' solely on the basis of pace; they may think, for example, that whether an activity is to be called 'running' depends on the putative runner's top speed, age, fitness level, and so on.

Because of the huge number of equally natural ways of drawing the line between activities that are called 'running' and activities that are not, there are many equally natural different truth-conditions any language user could easily have believed (7) to have. Absent further explanation, it is very unlikely that any two language users believe (7) to have exactly the same truth-conditions.

Here is the last example. There are many different, equally natural, ways to draw the line between

[15] See JBiz et al. (2010) for an example of such disagreement about the definition of the verb 'to run'.

things that are called 'dogs' and those that are not. For example, someone may believe that some of the dog-like creatures first domesticated by the end of the Miocene are called 'dogs'; others may refuse to call such creatures 'dogs', but believe that the dog-like domestic creatures from the late Pleistocene are called 'dogs'; etc. Because of these different ways of drawing the line between things that are called 'dogs' and things that are not, there are many different truth-conditions any language user could easily have believed 'Carla has a dog' (as used in certain circumstances) to have. A language user could easily have believed that the utterance is true if and only if Carla has a dog-like creature of the same species as the creatures first-domesticated by the end of the Miocene; that it is true if and only if Carla has a dog-like creature of the same species as the creatures from the late Pleistocene; etc. Due to the huge number of different beliefs about the sentence's truth-conditions a language user could easily have had, it is very unlikely that any two language users have exactly the same such belief.

Considerations about the great number of different beliefs about a sentence's truth-conditions a language user may have had are not limited to these examples. As I explained above (p. 6), those considerations generally apply to sentences involving predicates whose application depends on the properties an object has along one or more sufficiently fine-grained (perhaps continuous) dimensions. The examples are meant to illustrate the wide variety of context-*in*depedent terms for which those considerations hold. The examples support the claim that even conversations involving utterances of a wide variety of context-*in*dependent sentences exemplify *Variance*.

3 The case against *Variance*

The case for *Variance* assumes that the participants in a conversation's beliefs about the truth-conditions of a given sentence are not perfectly correlated. That is, it assumes that, at least in principle, those beliefs can come apart. This lack of perfect correlation, together with the vast number of truth-conditions any language user could easily have believed a sentence to have, makes it very unlikely that any two language users have the same beliefs about most sentences' truth-conditions.

To get a better idea of the lack of perfect correlation in people's beliefs presupposed by the case for *Variance*, consider the following example. Suppose there are two mercury thermometers that are submerged in the same liquid, and that that liquid has a temperature of around fifty degrees. There is

a huge number of readings each of the two thermometers could easily have produced, corresponding to the points in the line between (say) the marks signaling forty-nine and fifty-one degrees. Given the huge number of readings the two thermometers could easily have produced, the two thermometers are unlikely to produce exactly the same one. Given the huge number of extremely similar readings each thermometer could have produced, even small differences in calibration, the exact temperature of the liquid immediately surrounding each thermometer, the amount of mercury in each thermometer, and so on, are likely to produce a difference in the exact reading the thermometers produce (or even in the reading they produce up to a hundreth of a degree). Thus, though the two thermometers will often give very similar readings, they are very unlikely to give the exact same one.

The case for *Variance* presupposes that any two people's beliefs about a sentence's truth-conditions are as imperfectly correlated as the readings of the two thermometers from the example. Given the huge number of plausible and extremely similar truth-conditions any two language users could easily have believed a sentence to have, even small differences in those people's evidence, those people's attunement to the evidence, and the information each of those people deem relevant to the sentence's truth-conditions, among other factors, are likely to produce differences in the exact truth-conditions those two people believe an utterance to have. Thus, if people in fact have beliefs about a sentence's truth-conditions, they will often have similar such beliefs, but they are unlikely to have the exact same ones.

Opponents of *Variance* face the challenge of explaining how ordinary people's beliefs about a sentence's truth-conditions could be so closely correlated that the fact that one of the participants in a linguistic interaction has a certain belief about a sentence's truth-conditions makes it very likely that the other participants have that exact same belief as well. According to what I take to be the most promising strategies for answering this challenge, such close correlation arises because the facts (partly) responsible for the beliefs about a sentence's truth-conditions of one of the participants in the interaction are also (partly) responsible for the beliefs of the other participants.

For instance, suppose Anna utters 'Carla is tall' in conversation with John, and she believes that that sentence is true if and only if Carla is at least 1.8m tall. According to the present strategy, some of the facts that contribute to determining *Anna's* beliefs about the truth-conditions of 'Carla is tall' as she used it—say, that a certain standard for tallness is more salient than others given the assumptions Anna and

John make for the purposes of the conversation—also contribute to determining *John's* beliefs about that sentence's truth-conditions. Thus, it is not a mere coincidence that Anna and John both believe that 'Carla is tall' as Anna used it is true if and only if Carla is at least 1.8m tall: according to the present strategy, there is a single set of facts that is partly responsible for the fact that each of Anna and John have that belief. According to this strategy, because in all linguistic interactions there are certain facts which contribute to determining *all* of the participants' beliefs about the truth-conditions of the sentences uttered in the course of the interaction, it is not a mere coincidence that those participants have the same beliefs about those sentences' truth-conditions. Call this the *dependence strategy*.[16]

The rest of this section examines two versions of the dependence strategy and argues that they fail. By appealing to common ground and social externalism, respectively, those versions attempt to offer accounts of how it is that, in the majority of cases, the participants in a linguistic interaction come to have the same beliefs about the truth-conditions of the sentences they utter.[17]

3.1 Common ground

According to a popular picture of assertion, an assertion is a proposal to update the common ground—the set of propositions that all the participants in a conversation presuppose for the purposes of the conversation, that they all presuppose that they presuppose, etc.[18] That common ground is itself supposed to determine the content of an assertion,[19] and it is supposed to be such that if a proposition

[16] Thanks to Cian Dorr and Ian Grubb for discussion.

[17] I argue against a third version of the strategy in my dissertation (see ch. 1, section 3.1). According to that version, some propositions are more natural than others, and that makes them better candidates for the truth-conditional content of a sentence. For example, it is because of the greater naturalness (either psychological or metaphysical) of P that any two people who participate in the same conversation are likely to believe that a given sentence S is true if and only if P is true. As I argue, it is unlikely that standard or otherwise readily available accounts of metaphysical and psychological naturalness can be extended so as to make one of the truth-condition candidates of most propositions more natural than the others. I am skeptical, for example, that any one of `Carla is at least 1.8m tall`, `Carla is at least 1.81m tall`, `Carla is at least 1.82m tall`, and all the other candidates for the truth-conditions of 'Carla is tall' is more natural than the others.

[18] The idea that in every conversation there is a set of propositions all the participants presuppose, that those participants presuppose that they presuppose, and so on, can be traced back at least to Schiffer (1972), is clearly present throughout Lewis (1979), and drives much of Stalnaker's discussion in his (1974) and subsequent work.

[19] As Stalnaker (2009) puts it,

> [A]n assertion is, in effect, a proposal to shrink the context set [the set of possible worlds compatible with every proposition in the common ground] with the content of the assertion. But the context set represents the information that is presumed to be available for the interpretation of the speech act, and if the asserted content is not determined by this information, then the addressee will not be in a position to tell what is being proposed. (p.407)

is in the common ground, the participants in the conversation know that it is so or, at the very least, presuppose it.[20]

Some people may think that this picture of assertion is independently plausible and use it to formulate a version of the dependence strategy. According to that version of the strategy, the common ground determines the truth-conditions of the sentences asserted in the course of a conversation. Since all the participants in the conversation know what is in the common ground, they will all agree on the truth-conditions of the sentences asserted in the course of their conversation.

I will focus on the case of context-dependent sentences. According to the present strategy, in conjunction with the linguistic meaning of a context-dependent sentence, the common ground will determine that sentence's truth-conditions as used in the conversation. For example, suppose that Anna utters 'I like apples' in a conversation with John, and believes that that sentence as she used it is true if and only if she (Anna) likes apples. According to the present strategy, Anna's belief is partly determined by two factors: first, Anna's belief that the English word 'I' denotes whoever utters it; second, Anna's knowledge that both she and John presuppose that in the context of their conversation it was Anna who uttered 'I', that Anna and John both presuppose that the other presupposes it, that they both presuppose that they both presuppose that they presuppose it, etc. Since both Anna and John know that 'I' refers to whoever utters it, and that in the context of their conversation it is common ground that Anna uttered it, both Anna and John will believe that 'I like apples' in the context of their conversation is true if and only if *Anna* likes apples.[21]

More generally, the thought goes, a person's beliefs pertaining to the truth-conditions of context-dependent sentences are determined by her knowledge of the common ground and her knowledge of those sentences' linguistic meaning. According to this strategy, since in most conversations the participants know the linguistic meaning of the uttered sentences and what is in the common ground, in most cases they will come to have the same beliefs about the truth-conditions of the context-dependent sentences uttered in the course of the conversation.[22]

[20] See Hawthorne and Magidor (2009) for objections to this picture of assertion in connection to this kind of transparency assumption, Stalnaker (2009) for a defense of the transparency assumption, and Hawthorne and Magidor (2010) for a reply.

[21] See Stalnaker (1999) for elaboration of this picture in connection with the standard Kaplanian treatment of context-dependence. According to Stalnaker, "Since the relevant contextual parameters must be available, and presupposed to be available, they will be incorporated into the speaker's presuppositions, and so will be represented by the set of possible situations that constitute the context set."(1999, p.10)

[22] It is not straightforward to develop a version of the present strategy that addresses the argument for *Variance* in cases of

I don't think this strategy can be used to resist the case for *Variance*. One potential worry concerns whether the participants in a conversation ordinarily have the same beliefs about the linguistic meaning of the context-dependence sentences they utter, but I will set that worry aside throughout my discussion.[23] What I want to point out is that, for most context-dependent sentences, *if* the participants in a conversation make presuppositions precise enough to determine the truth-conditions of those sentences, it is very unlikely that they make the same such presuppositions.[24] Just as there is an enormous number of equally natural candidates for the truth-conditions of most sentences, there is an enormous number of equally natural (or otherwise viable) sets of propositions any person could have presupposed for the purposes of a given conversation, each of which determines different values for the parameters on which the truth-conditions of a context-dependent sentence depend. Given the enormous number of such sets, it is extremely unlikely that any two participants in a conversation will presuppose the propositions in exactly the same such sets.

Take for example the case of gradable adjectives. As I said above, according to some of the most promising semantic analyses of gradable adjectives, the truth-conditions of utterances involving such adjectives depend on contextually determined standards of comparison. Ordinary conversations rarely include explicit remarks about standards of comparison, so if the participants in the conversation are to reach the same conclusion about which standard of comparison should determine the truth-conditions of a given sentence, they must do so on the basis of perceptually available evidence. However, since there are small variations in how different people perceive their surroundings, it will be rare for any two people to reach the exact same conclusion about which standard should determine the sentence's truth-conditions.

For example, suppose Anna and John are waiting for Carla and see her walking towards them from afar. Looking at Carla, Anna starts a conversation with John by uttering 'Carla is tall. I hadn't noticed it before'. Since the conversation started with Anna's utterance, if the common ground has

context *in*dependence. So even if the present strategy succeeds (which, as I will soon argue, it does not), it would not count against the observations pertaining to context-*in*dependent expressions presented in section 2.2.

[23] The worry arises from the thought that, for many (perhaps most) context-dependent sentences, there is a huge number of different linguistic meanings—understood as functions from Kaplanian contexts to possible-worlds propositions—any language user could have associated with each of those sentences. Given the huge number of such different linguistic meanings, it is unlikely that any two language users associate the exact same linguistic meaning with any of a wide variety of sentences.

[24] I say 'if' because, for reasons related to the discussion of *Uncertainty* (see above, pp. 8–10), it is unlikely that ordinary speakers make presuppositions rich enough to determine such truth-conditions.

information about the relevant standard for tallness, it can't be in virtue of any explicit remarks about that standard. Suppose further that neither Anna nor John know what each other knows about the heights of objects outside their perceptual range, so they can't reasonably presuppose that they will make the same presuppositions about the heights of those objects. Because neither Anna nor John know what the other knows about the heights of objects outside their perceptual range, they also can't reasonably make any presuppositions about the standard of tallness to be assumed for the conversation on the basis of the heights of those objects. Thus, if information about the reigning standard of tallness is to be part of the common ground, it must make it into the common ground on the basis of what is perceptually available to both Anna and John.

Yet Anna and John also can't reach a common conclusion about the reigning standard of tallness on the basis of their perceptual evidence. Since there are small variations between most people's perceptual apparatuses, what looks to Anna to be a certain height may look to John to be a slightly different height—e.g. what looks to Anna to be 1.8m tall may look to John to be 1.82m tall. Given this difference in the way things look to Anna and John, it is very unlikely that they will make exactly the same presuppositions about the heights of the objects within their perceptual range. On the assumption that presuppositions about the standard of tallness are arrived at on the basis of presuppositions about the heights of certain objects, it is also unlikely that Anna and John will make the same presuppositions about the standard of tallness relevant to their conversation.

I assumed above that neither Anna nor John knew what the other knew about the heights of objects in their perceptual range. Now that I have pointed out that it's unlikely Anna and John could reach the same conclusion about an object's height through ordinary perceptual evidence (i.e. without the aid of a measuring instrument), we can weaken that assumption. Even if Anna and John know that they are both opinionated about the height of a certain object outside their perceptual range, it is unlikely that they will be able to make the same presuppositions about that object's height. Ordinarily, they will come to have a belief about the object's height just by looking at it, without the aid of any measuring device; given the perceptual differences between Anna and John, it is unlikely that they will have the exact same beliefs about that object's height.

Adjectives like 'tall' are the best case for the defender of the common-ground strategy. At least in principle, the participants in a conversation could reach the same conclusion about the relevant standard

of tallness on the basis of perceptual evidence available to all of them. Yet I have argued that, even for a word like 'tall', the participants in a conversation are unlikely to make the exact same presupposition about the relevant standard in the context of the conversation.

It is even more difficult to see how the participants in a conversation could all make the same presuppositions about the relevant standard for adjectives like 'rich', 'nice', 'cheap', 'expensive', 'relevant', and perhaps the vast majority of gradable adjectives. In those cases, it is even less plausible to think that all the participants in a conversation will make the same assumptions that could determine a relevant standard for the adjective. In the case of 'rich' or 'wealthy', for instance, it is unlikely that all the participants in a conversation will make the same assumptions about the average wealth of people in a certain population, let alone about the wealth of particular people.

Here is my conclusion from the discussion of common ground. It is unlikely that the participants in a linguistic interaction make the exact same assumptions pertaining to the values of the contextual parameters which determine the truth-conditions of sentences involving gradable adjectives. Absent such agreement about the values for the relevant contextual parameters, the common-ground strategy is not in a position to explain why all the participants in a conversation would come to have the same beliefs about the truth-conditions of sentences involving gradable adjectives. I believe similar remarks apply to the other cases of context-sensitivity I discussed in section 2.1.

The remarks I have presented so far are not meant to show that the notion of common ground is theoretically useless. The assumption that every conversation has a common ground is a fruitful idealization in formal pragmatics—the study of the reasoning processes that language users engage in in the context of a conversation—and nothing of what I said attempts against making that idealization when engaging in formal pragmatics. My point is instead that the strategy that uses common ground is not a convincing way of resisting the case for *Variance* or its consequences.[25]

3.2 Social Externalism

Social externalism is the view that differences in an individual's social environment may produce differences in the contents of that individual's thoughts, beliefs, and so on.[26] For instance, according to social

[25] See Lederman (forthcoming) for further challenges to the notion of common knowledge.

[26] The most prominent defender of social externalism is Burge (1979, 1986), but the general idea may be traced back to Putnam (1975). Williamson (2007) constantly appeals to social externalism in his attacks against analyticity. See Ludlow

externalism, people with the same internal states—e.g. people with exactly the same brain states—may have thoughts with different contents on account of belonging to different communities. To use one of Burge's famous examples (see Burge 1979), suppose Anna thinks she has arthritis in her thigh. According to Burge, if Anna had been in the same brain state but belonged to a somewhat different community, one in which the concept of arthritis was replaced by the concept of the different disease *thartritis*, her thought would have been about thartritis and not about arthritis.

Some opponents of *Variance* may think that, if social externalism is true, then it is very likely that members of the same linguistic community have the same beliefs about the truth-conditions of most sentences. Those opponents' line of thought may go as follows. If social externalism is true, then part of what determines someone's beliefs about the truth-conditions of a given sentence is her social environment, such as the linguistic community that person belongs to. Thus, the opponents of *Variance* may claim, if two people belong to the same linguistic community, they are very likely to have the same beliefs about the truth-conditions of any given utterance on account of belonging to the same linguistic community. Since most people who engage in conversations with each other belong to the same linguistic community—say, the community of speakers of the language in which the conversation takes place—they will have the same beliefs about the truth-conditions of the utterances involved in their conversation.

This line of reasoning overestimates the extent to which social environment can determine what we believe, even if social externalism is true. If social externalism is true, the linguistic community a person belongs to plays a role in determining her beliefs by determining the content of her internal states (e.g. brain states); however, even if social externalism is true, different members of the same linguistic community may have different beliefs on account of having different internal states (e.g. brain states). For example, even if Anna and John belong to the same community, they may have different beliefs whether arthritis is curable as a result of the fact that one of them is in brain state b_1 and the other is in brain state b_2. Thus, even if social externalism is true, the fact that two people belong to the same linguistic community does not by itself make it likely that they have the same beliefs, since the fact that two people belong to the same linguistic community does not make it likely that they have the same internal states (e.g. brain states) or internal states that are equivalent in the relevant ways. If the

(1995, 1997), Pollock (2015), Wikforss (2001) for criticism of social externalism.

present strategy is to succeed, its defenders will have to make some further assumption, according to which members of the same community are likely to have the same or equivalent internal states. Such an assumption would go over and above the standard commitments of social externalism.

We can get a better grasp of this point and of the way in which social environment determines the content of our beliefs by using the language of thought hypothesis. Roughly, according to that hypothesis, to believe a proposition P is to stand in a certain relation to a sentence in one's language of thought whose content is P.[27] To use a metaphor due to Schiffer (1981b), we can think of that relation to a sentence as that of having a token of that sentence in one's belief box.

Call the language of thought *mentalese*. If social externalism is true, then social environment determines the contents of our beliefs by determining the contents of the mentalese sentences tokened in our respective belief-boxes. So, for example, Anna's social environment determines that if Anna has a token of the mentalese sentence *M* in her belief-box, she believes that she has arthritis in her thigh. In the particular case of beliefs about a sentence's truth-conditions, social environment plays a role in determining someone's beliefs about a sentence's truth-conditions by determining the content of the mentalese sentences about that sentence's truth-conditions tokened in that person's belief-box.

What social environment does *not* determine is which of a wide range of mentalese sentences (whose contents are determined by social environment) pertaining to a sentence's truth-conditions is tokened in anyone's belief-box. Yet, for any natural-language sentence, there are as many mentalese sentences expressing different propositions about that sentence's truth-conditions as possible truth-conditions for the natural-language sentence; given the huge number of such mentalese sentences, it is unlikely that any two people will token exactly the same one in their respective belief-boxes. So social externalism by itself is not enough to resist the case for *Variance*.

Defenders of the present strategy may attempt to address the issue as follows. Individuate expression-types of natural language so as to count the disambiguation of the word 'bank' that denotes a river bank as one expression type, and the disambiguation of the word 'bank' that denotes a financial institution as another. Defenders of the present strategy will assume, first, that users of a language usually associate expression-types in natural language with expression-types in mentalese. Second, they will assume that those mentalese expression-types combine very much in the way their natural-language counter-

[27] See Field (1978) and Fodor (1987).

parts combine to form mentalese counterparts of natural-language sentence types. Third, they will assume that if two people belong to the same linguistic community and they token mentalese sentence-types that are counterparts of the same natural-language sentence-type, the tokens of those mentalese sentence-types have the same content (i.e. express the same proposition). Finally, they will assume that someone's beliefs about an ordinary-language sentence's truth-conditions are given by necessary equivalences (stated in mentalese) between a natural-language sentence type and its mentalese counterpart.[28]

For example, suppose that Anna and John are members of the same linguistic community, that Anna utters (7)—'Carla runs'—in the course of a conversation with John, that Anna associates the English words 'Carla' and 'runs' with the mentalese words 'C' and 'r',[29] respectively, and that John associates the same English words with the mentalese words 'C'' and 'r'', respectively. According to this view, Anna will token the mentalese sentence

(8) 'Carla runs' as used in circumstances c is true if and only if Cr

in her belief-box, whereas John will token the mentalese sentence

(9) 'Carla runs' as used in circumstances c is true if and only if $\mathsf{C}'\mathsf{r}'$.

Since Anna and John belong to the same linguistic community and the mentalese sentence types 'Cr' and '$\mathsf{C}'\mathsf{r}'$' are both counterparts of the English sentence 'Carla runs', tokens of (8) and (9) in Anna and John's respective belief boxes will express the same proposition. In turn, this means that Anna and John will have the same beliefs about the truth-conditions of (7) as Anna used it.

The present strategy may seem appealing when it comes to context-*in*dependent sentences, but it lacks the resources to resist the case for *Variance* when it comes to context-dependence. We can state the problem as a dilemma. On the one hand, if expression-types of natural language are individuated so as to count all utterances of a sentence like 'Carla is tall' (regardless of the circumstances in which the

[28] Note that, if the present strategy is to have any plausibility, it must leave room for the possibility of misunderstandings between members of the same linguistic community. For example, the view must allow that, in certain circumstances, one of the participants in a conversation may believe that 'Anna is next to the bank' is true if and only if Anna is next to a certain financial institution, while another believes that the same sentence is true if and only if Anna is next to a certain river bank. In the present implementation of the strategy, this flexibility is achieved by taking mentalese sentence-types to be counterparts of natural-language sentence-types, and by individuating expression-types of natural language so that the disambiguation of 'bank' that denotes financial institutions and the disambiguation of 'bank' that denotes river banks count as different expression-types. If expression-types in natural language are individuated in this way, it is in principle possible for two people to associate mentalese types that are counterparts of different disambiguations of 'bank', which in turn allows the view to predict that misunderstandings are possible (though, according to this view, very uncommon).

[29] Expressions written in this font are expressions of mentalese.

utterances are made) as tokens of the same type, the present view is at odds with context-dependence; it predicts that people believe every utterance of a given context-dependence sentence to have exactly the same truth-conditions, regardless of the circumstances in which the utterance takes place.

On the other hand, if expression-types of natural language are individuated so as to count tokens of 'Carla is tall' with different truth-conditions as tokens of different types, the present strategy does little to resist considerations from multiple candidates. Say for example that we individuate sentence-types so as to count tokens of 'Carla is tall' evaluated with respect to different Kaplanian contexts as tokens of different types. Given the enormous number of different sentence-types 'Carla is tall' could be disambiguated between, it is unlikely that Anna and John token biconditionals in their respective belief-boxes relating the truth of 'Carla is tall' with mentalese counterparts of the exact same disambiguation. The same holds for the other context-dependence sentences susceptible to multiple-candidate considerations, e.g. sentences involving gradable adjectives.

To make the point more concrete, suppose there are standards of tallness $t_0, t_1, \ldots, t_{10000}$, each of which determines different truth-conditions for 'Carla is tall' when given as input to that sentence's linguistic meaning. Given the number of such standards, there will be at least as many different sentence-types 'Carla is tall' could be disambiguated between, each with different truth-conditions. Given the number of sentence-types 'Carla is tall' could be disambiguated between, it is unlikely that there are mentalese counterparts of the exact same such sentence-type such that Anna's belief-box has a token of the mentalese sentence resulting from substituting one of them for 'S' in

(10) 'Carla is tall' is true in circumstances c iff S,

and John's belief-box has a token of the mentalese sentence resulting from substituting the other for 'S' in the same schema. Thus, the present strategy does not explain why it would be likely that the participants in a conversation have the same beliefs about the truth-conditions of an utterance of 'Carla is tall'. The same goes for other context-dependent sentences.

If what I have said so far is correct, the present strategy is not enough to resist multiple-candidates considerations regarding context-dependent sentences. Those considerations are enough to support a version of *Variance* restricted to context-dependent sentences, which in turn would provide sufficent grounds for rejecting the standard view of communication. Since the present strategy does not succeed

in upholding that standard view of communication, it is not clear what could motivate it as an account of people's beliefs about the truth-conditions of context-*in*dependent sentences in the first place.

4 Three kinds of communication-likeness

If *Variance* is true, successful communication can't be typically achieved due to the fact that the participants in a conversation have the same beliefs about the truth-conditions of the sentences they utter. Nor can successful communication require, even in normal circumstances, that the participants in a conversation infer from each other's utterances exactly what the other intended to communicate. For the remainder of this paper, I want to explore the question of what successful communication *does* require. In particular, I will discuss three different ways in which a linguistic interaction may be communication-like—i.e. ways in which a linguistic interaction may resemble ideal cases of successful communication (cases in which speaker and audience have the same beliefs about the truth-conditions of the sentences they utter)—despite the truth of *Variance*. What I want to propose is that there is no unique natural phenomenon that we talk about when we talk about successful communication; rather, there are several independent features a conversation may have which make it communication-like. As we will see later on, this leads to the adoption of a pluralistic picture of communicative success.

A linguistic interaction can be communication-like in that (a) it allows its participants to exchange certain pieces of relevant information with each other, in that (b) the participants in the interaction can have certain kinds of agreements or disputes about the truth of the sentences uttered in the course of the interaction that are not merely verbal, or in that, (c) given the right circumstances, the interaction may put (some of) its participants in a position to achieve certain goals in a distinctly non-coincidental way. These ways for a linguistic interaction to be communication-like are not exhaustive and, as we will see soon, they can come apart from one another.

Here is an example. Suppose Anna believes that the word 'green' denotes things of colors 2–5, whereas John believes that it denotes things of colors 3–6 (see figure 1). Anna is talking to John about the house she recently moved to, which is color 4. Prompted by John's question about the house's color, Anna utters:

(11) It is green.

Assume for the sake of simplicity that both Anna and John believe that 'it' as it occurs in (11) refers to *H*, Anna's house.[30] Because of their respective beliefs about the word 'green', Anna believes that (11) as she used it is true if and only if *H* is one of colors *2–5*, whereas John believes that (11) is true if and only if *H* is one of colors *3–6*.[31] Anna uttered (11) intending to communicate to John that her house is one of colors 2–5, but, as a result of hearing Anna's utterance, John thinks that Anna wanted to communicate that her house is one of colors 3–6.

Figure 1: Some colors

Despite the difference in Anna and John's beliefs about (11)'s truth-conditions and John's mistaken belief about what Anna intended to communicate, Anna and John's conversation resembles ideal cases of successful communication in the following ways. First, through her utterance of (11), Anna transmitted to John information about *H*'s color: that *H* is neither color 1 nor color 7, that *H* is not red, and so on. All this information is exactly about the subject matter Anna was talking about—i.e. *H*'s color—and in that sense Anna transmitted relevant information to John through her utterance of (11).

Second, given the circumstances in which Anna and John's interaction takes place, Anna and John can have certain kinds of agreements and disputes about (11)'s truth that are not merely verbal. For example, suppose that shortly after the conversation takes place John disputes the truth of (11) by uttering 'that's not true!', and that, pointing to *H* in a photograph, Anna replies 'yes it is, my house is *this* color (color 4)!'. In such a case, assuming John has normal vision and given his beliefs about (11)'s truth-conditions, John could not reasonably reply with something like 'Wait a moment! The fact that the house is that color does not make what you said true! That color is not green!'. That such a response would not be available to John suggests that Anna and John's dispute is not purely verbal.

Finally, in the right circumstances, Anna's interaction with John would put the latter in a position to achieve certain goals. For example, suppose Anna invites John to her new house and John does

[30] This assumption is controversial in the literature on anaphoric pronouns, but the controversy does not matter for present purposes. See King and Lewis (2017) for an overview of related issues.

[31] I am assuming for simplicity that the participants in a conversation have determinate beliefs about the truth-conditions of ordinary sentences. Later on I will say more about how the present discussion relates to the thesis I called *Uncertainty* in section 2.

not know the exact address, though he does know the house's block; as it happens, there are only two houses on Anna's block: Anna's, which is color 4, and another house, which is color 1. If (11) is true by *John's* lights, the thing to do is to go to the house that is one of colors 3–6. Since Anna's house is in fact one of colors 3–6, believing that (11) is true will put John in a position to reach Anna's house (given his beliefs about (11)'s truth-conditions). Moreover, given the circumstances in which Anna and John's conversation took place, the differences in the truth-conditions Anna and John believe (11) to have do not matter for the purposes of reaching Anna's house in the present scenario: since Anna's house is in fact color 4 and the other house is color 1, John could have reached Anna's house regardless of whether he had believed that (11) is true if and only if H is one of colors 3–6 or that it is true if and only if H is one of colors 2–5. This is not a mere coincidence: since Anna's house is color 4 and the other house is color 1, going to the house that is one of colors 3–6 is the same action as going to the house that is one of colors 2–5.

It might be tempting to think that these three ways for an interaction to be communication-like can all be explained in terms of similarity between propositions. According to this view, it is because the propositions

(12) `H is one of colors 2-5` and

(13) `H is one of colors 3-6`

are similar enough that Anna transmitted information to John about H's color, that Anna and John can have agreements or disputes about (11)'s truth which are not merely verbal, and that, in the circumstances discussed above, John could reach Anna's house thanks to his interaction with Anna.

That temptation should be resisted. (12) and (13) are as similar (given any ordinary notion of similarity) in any possible circumstance as they are in any other, yet the three ways for an interaction to be communication-like I just discussed can come apart depending on the circumstances in which the interaction takes place. For example, in a scenario in which Anna's house is color 2 rather than 4, and the other house is color 6 rather than 1, (12) and (13) would still have entailed that Anna's house is not red, and in that sense Anna would have still transmitted information to John about the color of her house through her utterance of (11). In that scenario, however, Anna and John could not have had the kind of non-merely-verbal agreements and disputes about (11)'s truth they could have had in

the original scenario. If in the new scenario John disputed (11)'s truth and Anna attempted to settle the issue by pointing to the house's color (i.e. color 2) as what makes (11) true, it would have been perfectly reasonable for John to reply (given his beliefs about the meaning of 'green'): 'Wait a moment! The fact that the house is that color does not make what you said true! that color is not green!'—which suggests the dispute would have been purely verbal. Hence, since (12) and (13) are as similar to each other in this new scenario as they were in the original one, that similarity does not suffice for Anna and John to have non-merely-verbal agreements or disputes about (11)'s truth.

Nor does the similarity between (12) and (13) suffice for Anna and John's interaction to put John in a position to reach Anna's house in this new scenario, or for the differences between those two propositions not to matter for the purpose of reaching Anna's house. If (11) is true by *John's* lights, the thing to do is to go to the house that is one of colors 3–6. Since Anna's house is in fact color 2, believing that (11) is true will not put John in a position to reach Anna's house (given his beliefs about (11)'s truth-conditions): if John believes that (11) is true, he will go to the house color 6, which is not Anna's house. Furthermore, unlike in the original example, the differences between (12) and (13) *do* matter for the purposes of reaching Anna's house. Since Anna's house is in fact color 2, if John had believed that (11) is true if and only if H is one of colors 2–5, believing that (11) is true would have put him in a position to reach Anna's house. Yet (12) and (13) are as similar in this new scenario as they were in the original one.

Similarity between propositions does not explain the communication-like features of a conversation we are interested in, but I believe those features should nevertheless be explained in terms of various relationships between propositions. I outline such explanations below, but a complete analysis falls out of the scope of this paper.[32]

Let's start with the transmission of relevant information. We can capture this feature in terms of a relationship between propositions: two people can exchange relevant information with one another through a declarative utterance just in case the propositions those people associate with the uttered sentence—i.e. the propositions those people respectively take to be true if and only if the sentence is true—have a relevant entailment in common. Here I will define relevant entailment using a version of Fine's truthmaker semantics (see his 2016, 2012, MS), but it could also be defined using Yablo's (2014)

[32] In chapters 2 and 3 of my dissertation I provide a more complete analysis.

version. In truthmaker semantics, a proposition's possible truthmakers and falsitymakers are taken to be possible states of affairs, which can stand in parthood relations with other states of affairs. A proposition's possible truthmakers (falsitymakers) are the possible states of affairs which are fully relevant to the determination of the proposition's truth-value, and which would guarantee the proposition's truth (falsity) were they to obtain. For example, a possible truthmaker for (12) is a state of affairs in which *H* is color 2, and a possible falsitymaker for the same proposition is a state of affairs in which *H* is color 1. A proposition's subject matter is represented as the set of that proposition's possible truthmakers and falsitymakers.[33]

Using these notions, we can define the following notion of *relevant entailment*: P relevantly entails Q if and only if (i) every possible truthmaker for P has a possible truthmaker for Q as a part, and (ii) every element in Q's subject matter is part of an element in P's subject matter. By the lights of this notion of entailment, (12) and (13) both entail that *H* is not red, that it is not color 1 or color 7, etc. Thus, the present view accurately predicts that Anna transmitted relevant information to John through her utterance of (11).[34]

Let us turn now to agreements and disputes. I said above that, in the scenario in which Anna's house is color 4, if John disputed the truth of (11) and Anna attempted to settle the issue by pointing to her house's color (color 4), John could not have reasonably replied something like 'the fact that the house is that color does not make what you said true!'. On the other hand, a similar response would be perfectly reasonable in a scenario in which Anna's house is color 2.

I propose to use truthmaker semantics to account for this difference in Anna and John's disputes in the two different scenarios: what distinguishes those two disputes is the fact that, in the original scenario but not in its variant, the propositions Anna and John (respectively) associate with (11) have the exact same truthmakers. Because in the original scenario (12) and (13) have the same truthmakers, Anna and John's dispute could have been settled merely by pointing to those facts. In contrast, in the

[33] Roughly, this corresponds to the idea that a proposition's subject matter is determined by the states of affairs that play a direct role in making a proposition true or false.

[34] Here is a rough explanation why (12) and (13) both entail that *H* is not red. All states of affairs in which *H* is one of colors 2–5 (the possible truthmakers for (12)) and all states of affairs in which *H* is one of colors 3–6 (the possible truthmakers for (13)) are themselves state of affairs in which *H* is not red (and so, parts of states of affairs in which *H* is not red). Second, every state of affairs that is either a truthmaker or a falsitimaker for the proposition that *H* is red concerns exclusively *H*'s color, and as such, is either a truthmaker or a falsitymaker for (12), and either a truthmaker or a falsitymaker for (13). Thus, both (12) and (13) relevantly entail that *H* is not red.

second scenario, the fact that makes (12) *true* (the fact that Anna's house is color 2) is the fact that makes (13) *false*, and so Anna and John's dispute would not have been resolved regardless of whether they knew the facts responsible for the truth-value of (11) by their respective lights.

More generally, what distinguishes the kind of disputes and agreements I called *non-purely verbal*—i.e. the kind illustrated by Anna and John's dispute in the original scenario—is the fact that, in those disputes or agreements, the proposition the disputants or agreers associate with the sentence whose truth is under discussion have the same truthmakers or the same falsitymakers relative to the scenario (i.e. possible world) in which the agreement or dispute takes place. According to this view, whether a dispute about the truth of a sentence is purely verbal depends both on which propositions the disputants associate with the sentence whose truth is under dispute *and* on the circumstances in which the dispute takes place. In that sense, the present view is a kind of externalism about non-purely verbal disputes.

Finally, I said that Anna and John's original conversation resembled ideal cases of successful communication in that, given the circumstances in which said conversation took place, it put John in a position to reach Anna's house in a non-coincidental way. In particular, I said that, given the circumstances in which Anna and John's conversation took place, the differences between the propositions they associate with (11) do not matter for the purpose of reaching H. Put informally, the differences between two propositions don't matter for the purposes of achieving a goal in given circumstances whenever, in those circumstances, any way of doing what one ought to if one of those propositions is true is a way of doing what one ought to if the other proposition is true, and vice versa. For example, given that Anna's house is color 4 in the original circumstances in which Anna and John's interaction takes place, any way of going to the house that is one of colors 2–5 is a way of going to the house that is one of colors 3–6.

We can capture this intuition more formally by representing a goal as a set of (possible overlapping) sets of possible worlds, each of which corresponds to a way of achieving the goal depending on how the world is. For example, the goal of reaching H will contain a set of worlds in which H is color 2, one in which it is color 3, one in which it is 5m tall, etc. Those sets of worlds correspond to ways to reach Anna's house: in worlds in which H is color 2, one can reach H by going to the house that is color 2; in worlds in which H is 5m tall, one can reach it by going to the house that is 5m tall, etc.

If we represent goals as sets of sets of possible worlds, we can say that a proposition is *useful* for

the achievement of a goal in a given possible world *w* just in case (a) it relevantly entails a proposition which is true in exactly the possible worlds in some union of sets in the goal, and (b) *w* is a member of at least one of those sets. Using the present framework, we can capture what it is for the differences between two propositions not to matter for the achievement of a given goal in terms of the notion of *practical equivalence*. Say that a set in a given goal is *maximally specific* just in case it has no proper subsets which are also members of the goal. Two propositions are *practically equivalent* relative to a possible world *w* and a goal just in case every maximally specific set in the goal of which *w* is a member and in which one of those propositions is true is a set in which the other proposition is true, and vice versa. Intuitively, this corresponds to the idea that every way of doing what one ought to do in *w* in order to achieve the goal if one of the two propositions is true is a way of doing what one ought to do in order to achieve the goal if the other proposition is true. Where P is the proposition the audience associates with a given sentence, and Q is the proposition the speaker associates with the same sentence, hearing an utterance of that sentence puts the audience in a position to achieve a certain goal *g* in a non-coincidental way relative to a given possible world *w* just in case: (a) P is useful to the achievement of the goal in *w*, and (b) every proposition relevant to the goal which is relevantly entailed by P is *practically equivalent* relative to *g* and *w* to a proposition relevant to the goal which is relevantly entailed by Q, and vice versa.

The fact that the three communication-like features I just examined can come apart suggests we should adopt a pluralistic picture of communicative success. In particular, I want to propose that there is no unique natural phenomenon that we talk about when we talk about successful communication; instead, there are several independent communication-like features a conversation may have, none of which is more fundamental than the rest. From this pluralistic perspective, the assumption that the participants in a conversation have the same beliefs about the truth-conditions of the sentences they utter obscures the differences between the various communication-like features a conversation may have and the facts that account for their presence. This is so because, if the participants in a conversation have exactly the same beliefs about the truth-conditions of the sentences they utter, conversations between them will tend to have all or most of the conversation-like features I introduced, among others.

According to the pluralistic conception of communicative success, *Variance* does not threaten the idea that we successfully communicate with one another through most of our conversations. Instead, it

illuminates the way to a more complex conception of communicative success, according to which communication as the standard picture conceives it can be thought of as a limit or ideal of communicative success. Ordinary conversations rarely, if ever, reach that ideal, but they still succeed in having some or all of the communication-like features I have described in this section, among others.

Before concluding, I want to address an important issue that came up in section 2 (pp. 8–10). There I said that not only are there good reasons to accept *Variance*—the thesis that the participants in a conversation rarely have the same beliefs about the truth-conditions of the sentences uttered in their conversation—but that there are also good reasons to accept *Uncertainty*—the stronger thesis that the participants in a conversation rarely have beliefs about the truth-conditions of the sentences uttered in the conversation.

Throughout this section I have assumed (against *Uncertainty*) that the participants in a conversation in fact have determinate beliefs about the truth-conditions of the sentences uttered in the conversation. I will not attempt here to give a full account of the communication-like features a conversation may have if *Uncertainty* is true. However, the discussion so far puts us in a position to outline such an account. I have linked each of the communication-like features a conversation may have with a relationship between the propositions the participants in a conversation associate with a given sentence. If the participants in a conversation are generally uncertain as to which particular proposition to associate with a given sentence, we can modify the current picture so as to require that, for each proposition one of the participants associates with that sentence to a high degree, there is a proposition the other participant associates with the sentence to a high degree such that those two propositions stand in the required relation, and vice versa. Needless to say, more work is required to see the exact predictions the resulting view yields.

5 Conclusion

In this paper I argued for *Variance*, the thesis that, for most linguistic interactions and most sentences used in those interactions, there is no proposition such that all the participants in the interaction believe that the sentence as it was used is true if and only if that proposition is true. The case for *Variance* relies on the observation that, for most sentences (as used in a linguistic interaction), there is an enormous

number of equally eligible truth-conditions a language user could easily have believed the sentence to have. Given that observation, it is very unlikely that any two language users believe a given sentence to have the same truth-conditions. I supported this line of reasoning with examples from the literature on context-dependence and examples of context-independent sentences subject to the same considerations. I also considered and rejected ways of resisting the case for *Variance* which appeal to the notion of common ground and to social externalism, respectively.

In the introduction I mentioned that a consequence of *Variance* concerns the nature of successful communication: if *Variance* is true, communication can't normally be successful thanks to shared beliefs about the truth-conditions of the sentences uttered in the course of an interaction, nor can communication normally require that the audience be in a position to tell exactly what the speaker wanted to communicate on the basis of the latter's utterances. Towards the end of the paper, I outlined an alternative picture of communicative success: the pluralistic picture. According to the pluralistic picture, there are many independent ways for a conversation to be communication-like, none of which require the participants in a linguistic interaction to have the same beliefs about the truth-conditions of the sentences they utter. From the perspective of the pluralistic conception, part of the aim of a theory of communication is to understand the different ways in which linguistic interactions can be communication-like and the facts in virtue of which those interactions can be communication-like in those ways. I have discussed some of those ways for a conversation to be communication-like in the previous section, but no doubt others can be discovered.

I would like to conclude by calling attention to two further consequences of *Variance* and the discussion of communicative success. One such consequence concerns the debate between contextualists and invariantists. Contextualism is the view that the semantic value of many words other than the standard indexicals (e.g. 'I', 'here', 'now') depends on the context in which they are uttered in one way or another. According to Cappelen and Lepore (2005), if contextualism is true, then people who find themselves in different contexts would not understand the same utterances in the same ways. According to them, that would make communication between people in different contexts difficult to explain.[35] But if, as I claim, *Variance* is true, there is no special problem of cross-contextual communication: any

[35] "If communicated contents are restricted to (or essentially tied to) specific contexts of utterance, then it is hard to envision how speakers who find themselves in different contexts can communicate, i.e. under such circumstances communication between contexts is thrown into doubt" (Cappelen and Lepore 2005, p.153)

account of communication should explain how people communicate despite failing to have the same beliefs about the truth-conditions of the sentences they utter.[36] In line with pluralism about communicative success, contextualists can attempt to explain the ways in which cross-contextual linguistic interactions can be communication-like without appealing to shared beliefs about a sentence's truth-conditions.

Another consequence concerns a recent puzzle about speech reports due to Dorr and Hawthorne (2014). I take Dorr and Hawthorne to argue that facts about the proposition(s) someone semantically expresses through a given utterance are highly modally plastic: very tiny differences in the underlying microphysical facts would lead to differences in the proposition(s) someone semantically expresses through a given utterance. If this is so, Dorr and Hawthorne claim, most of our counterfactual speech reports are likely to be false. We can take a hint from pluralism about communicative success to explain why, even if the claim about plasticity holds, this need not affect the modal robustness of ordinary speech reports. In particular, one can adopt a view of speech reports according to which there are different ways for them to be true: such reports can be true if they attribute to the speaker the saying of a proposition relevantly entailed by what the speaker semantically expressed, if they attribute the saying of a proposition that, in the possible world in which the reported speech act takes place and every possible world sufficiently similar to it, has the same truthmakers or the same falsitymakers as the proposition the speaker semantically expressed, etc.

A better understanding of *Variance* and the study of the various ways in which a conversation-like can thus play an important role in coming to understand other phenomena. Cross-contextual communication and counterfactual speech reports are two of them.

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[36] The same is true of an objection to holism about meaning often attributed to Fodor and Lepore. Jackman (2017) presents the objection as follows: "Strictly speaking, informative communication would be impossible [if meaning holism is true]. No one would mean the same thing by any of their terms unless they shared all the same beliefs, in which case, communication would be possible, but uninformative, and truly understanding the utterances of others would be impossible unless you already knew everything that they believed." Yet if *Variance* is true, the problem of explaining what informative communication requires arises for nearly everyone.

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