

Experimental Pragmatics in Linguistics and Philosophy

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Consider the following truism: People use sentences in different contexts to communicate with one another. This statement implicates two things in the act of communication: sentences and contexts. Pragmatics is the study of the role of context in communication.

I discuss here experimental research in pragmatics. In Section 27.1, we get a little clearer on pragmatics by contrasting the role of context in communication with the role of sentence meaning. As we will see, there is some disagreement about which communicative effects are due to which thing, so there is some disagreement as to where to draw the boundary between semantics and pragmatics. In Section 27.2, we will consider a rich experimental research project in pragmatics, which has developed primarily within linguistics and psychology over the course of the last several decades in response to the boundary disputes discussed in section one. Finally, in Section 27.3, we will consider a more nascent experimental research project, which has developed within philosophy in recent years, and which, building upon insights from psychology, has as its primary goal understanding survey pragmatics. As we discuss these two projects, we will be attentive to the methods unique to each project and the philosophical and linguistic underpinnings they share in common.

27.1 Sentence and Context

According to an influential picture of communication, each sentence has a meaning independently of context (with limited exceptions made for indexical and demonstrative terms), and this meaning specifies a set of conditions under which the sentence is true. During particular instances of communication, this picture goes on; speakers typically endorse the truth-conditions of the sentences they speak. Additionally, speakers and their interlocutors share an understanding (be it only tacit) of the regularities of human communication and inference, as well as

the particular context of utterance. On the basis of this shared understanding, speakers can use their endorsement of particular sentences to imply more than the sentences themselves mean, and hearers can infer the implications that speakers intend. On this picture of communication, context enters after sentence meaning. Thus, semantics (here understood roughly as the study of sentence meaning) is separate from and prior to pragmatics (the study of the role of context in communication).

This picture of communication is based upon the account developed by Paul Grice in *Logic and Conversation* (1989). However, as is well known to philosophers, Grice made no processing claims and gave no indication of a time course of implicature derivation. Thus, this is a picture of communication inspired by Grice, though one that cannot be attributed to him. Also, as I will explain in a moment, many theorists regard this picture of communication as fundamentally flawed. But that does not mean it has nothing to teach us. It is reasonable to suppose that we infer much from what our interlocutors say, given our background knowledge of the context in which they say it. According to this psychologized descendent of Grice's influential account, we can do this because conversation is governed by certain conventions or rules for communication. These conventions dictate that our contribution to a talk exchange should be true, informative, appropriately related to the context (including what has already been said), and easy to interpret. Sometimes, what is said (i.e., what the uttered sentence means – or, in any case, the primary propositions expressed by a sentence) will satisfy these conventions. But when it does not, speakers will draw inferences about what the speaker might have meant in addition to what he or she strictly said. Furthermore, because speakers implicitly (though nonconsciously) understand that conversation works in this way, they can exploit such conventions to mean more than they say – and they do so in numerous instances in which for a variety of reasons they cannot or do not want to say what they nonetheless want to get across. In such instances, speakers *imply* what they want to get across.

Call this the constrained picture of pragmatics – constrained because it limits the role of context to the phase of communication that occurs after sentence meanings have been decoded. Some researchers, such as Atlas (2005), have augmented and refined the constrained picture, while others, including Davis (1998), have offered searching criticisms of it. But numerous other theorists have embraced the constrained picture, and, crucially, the idea that what a speaker means in uttering a particular expression in a given context is inferred from what is said and other of the hearer's beliefs about the context of utterance. With this view in mind, they have offered explanations of a variety of linguistic phenomena and behaviors in terms of conversational inference. There are accounts of scalar phenomena in terms of conversational implicatures.¹ An influential implicature account of metaphor has also been developed.² Others have offered inferential accounts of presupposition, pragmatic slack, and the offensiveness of slurs, among many other phenomena.³

Be that as it may, a number of theorists now regard the constrained picture as fundamentally flawed. Specifically, a number of theorists now maintain that, considered apart from context, a large set of sentences make insufficient contributions to the truth conditions people actually attribute to utterances – and, more importantly, to the truth conditions that are plausible inferential grounds for the inferences that people actually draw from utterances of these sentences in context. That is, theorists now recognize that the propositions that are logically prior to other, communicated propositional content depend upon context in the following sense: A single sentence considered in different contexts will be attributed different truth conditions (in a way that is not merely explicable in virtue of traditional indexical elements). For one of numerous examples, consider Searle's (1978) discussion of the sentence, "the cat is on the mat." The conditions under which this sentence is true differ across the different contexts of Earth and outer space. Uttered on Earth, this sentence is true if the cat and the mat bear the appropriate gravitational orientation to one another relative to the planet. The observer's visual perspective on the cat and

the mat is irrelevant in this context. Uttered in space, however, this sentence would be thought true only if the cat and the mat were appropriately oriented within the speaker's (or hearers') visual field. Their gravitational relation to the Earth would be irrelevant.

Such "context-shifting" examples have led many theorists to sever truth-conditionality from context-invariance. Some contemporary theorists identify expression meaning with the context invariant (and non-syntactic) features of expressions, while conceding that these features are often insufficient to determine truth conditions.⁴ Others focus on truth-conditions, though they maintain that the context-invariant features of many (perhaps most) expressions constitute only a partial contribution of the material needed to fashion truth-conditional meaning. To these theorists, the context-invariant features of many expressions are functions that take contextual information as arguments and determine truth-conditional content. In other words, context dependence is modeled on the account of demonstratives offered by Kaplan (1989), though proponents of this view argue that semantic context-dependence is much more widespread than Kaplan appreciated.⁵ Some contemporary theorists reject the sentence-meaning framework altogether. Some of these theorists instead maintain that each utterance is simultaneously understood to convey many propositions (though only one is explicitly communicated and carries the truth conditions of the utterance), through a thoroughly context-sensitive process of understanding, which has as its goal an interpretation that is of optimal cognitive significance.⁶ All of these theorists embrace a less constrained conception of pragmatics in thinking that context of utterance helps determine the proposition that is logically prior to implicatures itself.

To what extent do pragmatic, contextual factors contribute to the determination of primary propositional content? Contextualists maintain that pragmatic intrusion is widespread. Others deny this. Presented with context shifting arguments – arguments in which the truth conditions of what is said seem to change relative to context – opponents of contextualism adopt one of two strategies. Some maintain that the presumed, pragmatic intrusion is actually traceable to the syntactic or semantic features of the relevant expressions. Others contend that the apparent shifts in truth conditions are actually shifts in what is implicated across contexts. Recently, linguists and psychologists have experimentally investigated these different accounts. As an entrée into this research, I will briefly discuss experimental work on so-called scalar implicatures, before even more briefly looking at figurative language.⁷

27.2 Context in Primitive Propositions

Suppose Charlie is in a position to know how many children Darlene has. If we are wondering how many cars we need to transport Charlie and Darlene's families to the beach, Charlie might say, "Darlene has two kids." In this context, he would often be understood to primarily convey *that Darlene has two kids, and not more than two kids*. The sentence itself though, independent of context, seems consistent with Darlene's having more than two kids. And, indeed, in another context, it might be taken in this way. For example, if the rain god Tlaloc requires only two more child sacrifices, the utterance "Darlene has two kids" might be understood to mean *that Darlene has at least two kids* (so enough kids for the requisite sacrifice). The debate over scalar implicatures concerns how to explain the variance in what Charlie is taken to mean in different contexts. Other locutions that constitute the class of scalar implicatures involve the logical operator "or" (utterances of which are often understood to mean *or not and*), quantity expressions such as "some" (often understood to mean *some but not all*), and mental state expressions such as "believes" (often understood to mean *believes but doesn't know*).⁸

Different explanations of the phenomenon of scalar implicatures have emerged. According to one family of explanations (Horn 1972, 1989; Gazdar 1979; Hirschberg 1991; Geurts 2010),

additional information (e.g., *that Darlene has no more than two kids*) is implied by the propositions that are invariably directly expressed by sentences such as “Darlene has two kids” in particular contexts of utterance. This view suggests that the extra information is implicated because what is said falls at a lower point on a scale of informativeness than what might have been said and would have been maximally informative in the context of utterance. Thus, these Gricean *implicature* views are responsible for the “scalar implicature” nomenclature.

A different family of explanations of scalar implicatures (see, e.g., Levinson 2000; Chierchia 2004; Storto and Tanenhaus 2005) construes the extra information at issue in scalar implicatures as closely related to the lexical content of specific words, such as “two,” “some,” and “or.” These views suggest that extra information is conveyed by these words by default and as a matter of course, not because the sentences of which they are a part fall short of certain conversational aims. Like the implicature views, this family of *lexical content* views is consistent with the traditional Gricean picture of communication.

Finally, a third family of proposals (Sperber and Wilson 1987, 1995; Carston 1995, 1998; Bach 2006) splits the difference between the previous two. It suggests that scalar information is the result of localized enrichment of concepts lexically encoded by specific words, not further propositional content inferred because the sentence’s meaning fails to satisfy certain conversational maxims. But it denies that such information is associated with sub-sentential expressions by default. Inherent in this third family is a denial of the view that sentences determine propositions apart from context. Proponents of this *contextualist approach* suggest that sentences encode a non-propositional, logical form, which is subsequently enriched in various ways by pragmatic processes informed by the context of utterance.

Empirical methods have helped untangle the question of scalar implicatures, providing clear evidence against lexical content views and as yet inconclusive insight into implicature and contextualist approaches. A variety of methods have been applied to the problem of scalar implicatures – including simple behavioral response studies (Paris, 1973; Gibbs and Moise, 1997), processing time studies (Bott and Noveck, 2004; Breheny, Katsos, and Williams 2006), developmental studies (Noveck 2001; Pouscoulous *et al.* 2007), and eye-tracking studies (Huang and Snedeker 2009; Breheny, Ferguson, and Katsos 2013). Here I briefly discuss some of this research with an eye to introducing several of the distinctive methods researchers have used.⁹

Processing time studies cast significant doubt on lexical content views. For example, in one influential study Breheny, Katsos, and Williams (2006) had one group of participants read typical scalar sentences, such as, “The director had a meeting with some of the consultants,” while another group read sentences that clearly specified the scalar enrichment, such as, “The director had a meeting with only some of the consultants.” The experimenters then timed how long it took participants to read the sentence, “The rest did not manage to attend.” If the syntactic correlation view were correct, then participants would presumably read the target sentence at the same speed regardless of which sentence they read first. After all, on that view “some” is understood to convey by default *some but not all*, therefore each initial sentence would convey that the director met with some but not all of the consultants. In fact, contra the *syntactic correlation* view, the target sentence was read more quickly when the experimental sentence explicitly specified that some but not all of the consultants met with the director.¹⁰

Developmental studies also suggest problems for lexical content views. For example, Pouscoulous *et al.* (2007) found that children were more likely to infer scalar information when overall cognitive load was decreased, which is readily explicable if such information is optionally inferred on the basis of background knowledge, but not if such information is conveyed by default. However, Foppolo, Guasti, and Chierchia (2012) have recently shown that five-year-old children’s ability to infer scalar information for the same materials is highly sensitive to the task demands of particular experimental designs. This suggests that the developmental findings

reported earlier may be explained by children's general cognitive capacities, and therefore not particularly informative about scalar implicatures.

There is less decisive evidence against either contextualist or implicature views than against lexical content views. Recently, studies designed to tease apart the former two families of hypotheses have focused on the distinctive architectural models of communication proposed by those who would explain scalar implicatures as true implicatures, on the one hand, and contextualists – who maintain that scalars are the result of pragmatic intrusion into primary propositional content – on the other. As discussed earlier, the constrained view of pragmatics holds that sentence meanings are primary propositions: Sentence meanings ground and will typically figure in implicature calculation. Thus, according to theorists who embrace this view, sentence meaning will typically be calculated *before* implicatures – or, to put it another way, semantic processes occur before pragmatic processes. By extension, implicature accounts of scalar inferences hold that primary propositions are understood before scalar information is inferred. On the other hand, contextualist views hold that semantic and pragmatic processes operate co-temporally. On the relevance theoretic view, for example, hearers interpret what a speaker says so that it satisfies their expectations of relevance; and it is the total package of primary propositions together with whatever implications follow from such propositions that either satisfy or fail to satisfy expectations of relevance. Thus, contextualist accounts such as relevance theory hold that scalar information is arrived at simultaneously with the hearer's interpretation of what is said and the implications that follow from that interpretation.

Taking these predictions about the time-course of interpretation to heart, Huang and Snedeker (2009) present results of a looking-time study that favor an implicature view, according to which sentence meaning is derived before, not simultaneously with, scalar information. In their experiments, participants were presented with a story in which four children (two boys and two girls) end up with various items. In one story, for example, one girl and one boy end up with two socks each. The other girl ends up with three soccer balls, whereas the other boy ends up with nothing. This story was paired with a visual array, divided into four quadrants, with one of the characters in each of the quadrants along with the items he or she ended up with at the end of the story. Participants were then asked, "Which girl has (some/all/two/three) of the (socks/soccer balls)?" Participants' eye movements were tracked to see when they looked at the correct target. The interesting comparison was between how long it took participants in the "some of the socks" condition compared to the other conditions to look at the appropriate target. On the assumption that the contextual knowledge necessary to derive scalar information was already present at the time the target sentence was uttered,¹² a contextualist view would suggest that participants should be able to enrich the meaning of "some" when they first hear it, concurrent with deciphering other components of the sentence, and before they hear the disambiguating phrase "socks." In fact, for all of the other conditions, (all/two/three) participants had begun looking at the correct target before they heard the disambiguating noun phrase (socks/soccer balls). But Huang and Snedeker found that it took participants significantly longer – about 1 second longer – to disambiguate between the girl with two socks and the girl with three soccer balls in the "some" condition. This, they argue, favors a view according to which sentence meaning must be interpreted before scalar information is worked out, which would seem to favor the implicature view over the contextualist approach.

However, as noted, Huang and Snedeker's explanation of their finding is supported only on the assumption that the background knowledge necessary for working out the scalar interpretation was actually available to participants at the time the relevant word ("some") was uttered. If not, participants would presumably have to wait until the specific nominal phrase was uttered to disambiguate the appropriate reference. Focusing on this point, Breheny, Ferguson, and Katsos (2013) challenge Huang and Snedeker's explanation by presenting results that suggest scalar

information is accessed simultaneously with nonscalar sentence interpretations when relevant contextual information is sufficiently primed. This result favors the contextualist view.

We can see the same debate between those who embrace a more constrained role for pragmatics and those who hold that context shapes primary propositions playing out in recent experimental pragmatic work on figurative language. However, as I will explain, it is difficult to know what to make of some of this work. I will focus on some studies examining processing speed of literal versus figurative language. These studies rest on the assumption that implicature calculation involves comprehension of two truth-conditional contents, one inferred from the other. Therefore, if metaphorical meanings are implications from literal sentence meanings, it should take longer to understand a metaphorical meaning than a nonimplicative, literal sentence meaning. Thus, timing studies have been employed to try and adjudicate between implicature and contextualist views of metaphorical meanings.

In fact, findings on processing time of figurative utterances compared with literal utterances have been fairly mixed. On the one hand, Gibbs found no difference over the course of several studies (1990, 1994). And, in one important study, Glucksberg, Gildea, and Bookin (1982) found that participants took longer to judge whether a sentence was “literally” true when it admitted of a salient metaphorical interpretation, even when they had been told to pay attention to only literal meanings. One might not expect this result if metaphor processing required literal interpretation – however, it could also be that the salience of the figurative meaning distracted participants, even if its calculation was in some sense optional and ancillary. On the other hand, as Camp (2006) discusses:

Various studies (e.g. Blasko and Connine 1993, Gentner and Wolff 1997, Bowdle and Gentner 2005, Giora 1997, 2002) have found that unfamiliar and novel metaphors take significantly longer to process than either literal sentences or familiar metaphors (159).

This might be a surprising result from the contextualist point of view, but it is not entirely inexplicable. Familiar figurative utterances, but not literal ones, are likely to work by way of well-established cognitive associations.

Analogously to this last point, Camp (2006) points out that if metaphor and literal utterance processing were on a par, this would not clearly tell against a Gricean view, since:

Grice and Searle intended their theories as rational reconstructions, aimed at explaining how utterances could in principle enable successful communication. They were not concerned with how utterances were actually processed, *let alone* with the conscious experience of linguistic interpretation (157).

A contextualist could also explain slower processing speeds for figurative meanings compared to some literal meanings. After all, some literal meanings are close to lexically encoded meaning, whereas figurative utterance meanings universally depart from encoded meaning in requiring enrichment through primary pragmatic processes.

Experimental research by psychologists and linguists on the nature of primitive propositions is rich and diverse. In the studies mentioned earlier, we can see a variety of methods at work. Within philosophy, a more uniform approach to pragmatic phenomena has developed.

27.3 Conversational Inferences

In the previous section, we discussed work aimed at deciphering whether particular linguistic phenomena were the result of pragmatic intrusion into semantics, or simply traditional, conversational inferences. But, an experimental approach has also been undertaken in an attempt to

explain particular linguistic phenomena in terms of conversational implications and inferences. Some of these phenomena are of traditional interest to linguists and philosophers of language.¹³ But here I want to focus on a kind of linguistic phenomena that has recently caught the attention of philosophers: responses to formal and informal experiments intended to uncover the nature of philosophical concepts. In other words, I want to examine pragmatic approaches to experimental philosophy.

The turn to pragmatics within experimental philosophy was ushered in by two influential criticisms of experimental philosophy. While Kauppinen (2007) concedes that intuitions about thought experiments are important data in assessing philosophical analyses of philosophical concepts such as *intention* and *knowledge*, he contends that we should not rely on the intuitions of the lay participants experimental philosophers recruit to participate in their studies. Instead, we should rely on the intuitive assessments of philosophical experts in appropriate situations of dialogue and reflection. According to Kauppinen, these are the only intuitions we can reasonably expect to exhibit speaker competence, absence of performance errors, and a basis in semantic rather than pragmatic considerations. And, on Kauppinen's reconstruction of (often implicit) philosophical appeals to intuition, all of these features are required for intuitions to constitute evidence for or against a conceptual analysis.

Note Kauppinen's emphasis on the semantic/pragmatic distinction. According to Kauppinen, in philosophical conceptual analyses we are interested in "the semantic contours of the concept at hand or the contribution it makes to the truth conditions of sentences in which it is used" (13). But Kauppinen is skeptical of our ability to tell how a participant in an experimental study is interpreting a vignette. Specifically, he worries that we cannot tell whether the participant's response to an experimental probe was made on the basis of her semantic grasp of the relevant concept or rather to avoid licensing some pragmatic implication in the particular context of utterance. If we lack this ability, and if Kauppinen's account of philosophical appeals to intuition is correct, then we are unable to rely on lay participants' responses to formal experiments as evidence for or against a philosophical conceptual analysis.¹⁴

Cullen (2009) makes a similar point. According to Cullen, when philosophers appeal to intuitions they are interested in classificatory judgments (e.g., whether the scenario described by the vignette should be classified as an instance of knowledge). But, "survey responses are a kind of behavior generated by several different inputs, only one of which might be a judgment of... [this]...kind" (277). Thus, survey responses are at best an imperfect indication of participants' classificatory or conceptual judgments. Cullen points out that many experimental philosophers have disregarded this distinction. Indeed, according to Cullen, experimental philosophers have only been able to make their startling claims – such as that there exist order effects for intuitive assessments of thought experiments or cross-cultural variation in intuitions – by "identifying survey responses with intuitions" (293). But Cullen raises significant doubts that such an identity is warranted. In particular, Cullen argues that Weinberg *et al.*'s (2006) results for experiments on Gettier style cases are easily explicable on the readily available assumption, "that Weinberg *et al.* were measuring, *inter alia*, different cultures and different SES groups reactions to the pragmatic features of their surveys" (292). Although Cullen's paper is largely a negative critique of experimental philosophy, Cullen is not as skeptical as Kauppinen of our ability to tease apart semantic and pragmatic influences on experimental participants' responses. At its core, Cullen's paper makes a positive suggestion: Experimental philosophers must regard their primary experimental method of asking lay people questions about short vignettes as a conversation, which, like all conversations, is shaped by pragmatic inferences.

Kauppinen and Cullen's criticisms of experimental philosophy rightly emphasize a Gricean perspective on communication. Asking an experimental participant to respond to an experimental probe is a communicative act, as is the act of responding to such a probe. The participant

wants his response to be informative, relevant, and true. And, he assumes that the experimenter is asking about something important and nonobvious. If a survey question, interpreted literally, is by the participant's lights obvious or irrelevant, he will likely understand the experimenter to mean something more or other than what the words strictly mean. If a particular survey response would imply something the participant doesn't want to imply, he might avoid giving that response, whether or not he thinks it is the correct one. Alternatively, he might give a response he strictly thinks incorrect because it implies something important and true. These possibilities might interfere with the intended aims of an experimental study. Recently, experimental philosophers have become more cognizant of this basic Gricean perspective. Experimental philosophy has turned the pragmatic eye upon itself, and experimental philosophers have been offering explanations of one another's findings in terms of conversational inferences and implications.¹⁵

In the remainder of this section, I discuss two pragmatic explanations for experimental findings. Regardless of the ultimate success of these explanations (one is now known to be unsuccessful), our discussion of these explanations will provide a framework for thinking about the role of conversational inferences in experimental philosophy and an introduction to some methods for testing pragmatic explanations.

Adams and Steadman (2004) offer one early pragmatic explanation of a core finding of experimental philosophy. The finding – popularly known as the Knobe Effect – is the side-effect effect first systematically discussed by Joshua Knobe (2003a), in which people, “seem considerably more willing to say that a side-effect was brought about intentionally when they regard that side-effect as bad than when they regard it as good” (193). In his most influential study, Knobe found that participants overwhelmingly responded that a company chairman who approved a plan that would harm the environment *intentionally harmed the environment*, even though he had no desire to harm the environment. On the other hand, participants overwhelmingly responded that a chairman who approved a plan that would help the environment *did not intentionally help the environment*, when he had no desire to help the environment. (See Cova this volume, for a thorough discussion.)

According to Adams and Steadman (2004), participants in Knobe's studies respond that the harming-chairman acted intentionally not because they actually think he acted intentionally, but rather because they think bad acts are deserving of blame and to say that the chairman did not harm the environment intentionally would imply that he is not deserving of blame. More specifically, according to Adams and Steadman, these participants assent to something that, by their own lights, is strictly untrue (that the harming chairman acted intentionally), because it implies something else, which is important and true. That one intentionally performed a bad act implies that one is deserving of blame. Because they are not otherwise provided an opportunity to indicate blameworthiness, participants in the bad condition *say* that the chairman acted intentionally in order to *get across* that he is deserving of blame, according to Adams and Steadman. (An analogous explanation is offered for participant responses in the helping chairman vignettes. Participants do not say that this chairman acted intentionally because to say this would imply he deserves praise, which he does not.)

Adams and Steadman explain participants' responses to Knobe effect vignettes in terms of what those responses imply. Participants want to imply that the chairman is blameworthy. Thus, if we alter the case in such a way that participants no longer want to blame the chairman, we should see the effect go away, if Adams and Steadman are right. However, this is not what we see. Phelan and Sarkissian (2008) found the same high level of intentionality judgments in a conceptual replication of Knobe's bad side-effect case, despite the fact that participants did not think the agent in this case was deserving of blame. So, a desire to blame does not seem necessary to intentional side-effect assessments. Nor does a desire to indicate blame provide a sufficient reason for saying an agent acted intentionally. Knobe (2003b) found that participants judged a drunk driver who killed a family of five as deserving of blame, despite claiming that he did not act

intentionally. So, intentionality responses in chairman-like cases do not seem to be explained by participants' desire to blame the agent, *contra* Adams and Steadman.

Adams and Steadman attempted to explain the Knobe effect in terms of background beliefs and desires related to blameworthiness. Experimentalists tested their hypothesis by investigating these beliefs and desires and found that people conceptualize neither a necessary nor a sufficient connection between intentionality and blameworthiness. This provides one model for how to test a pragmatic explanation of survey responses: Examine the background beliefs and desires that the pragmatic explanation invokes. But recently, experimentalists have also used another method to test pragmatic explanations. Pragmatic explanations either claim that participants say one thing in response to a conceptual experiment because they want to convey something else, or alternatively, that, because of pragmatic pressures, participants understand an experimental probe to be asking about something other than what the probe understood literally is asking about. Either way, these explanations claim that there is an asymmetry between what is said and what is meant. Therefore, a natural method for testing these explanations would involve asking participants to paraphrase what is meant by the relevant probe or response. If participants understand the probe to be asking about something other than what it is literally asking about, this should be reflected in the paraphrase.

Building on some work by Phelan (2010), Phelan, Arico, and Nichols (2013) used this paraphrase method to support a pragmatic explanation of some results from the experimental philosophy of mind. In an influential paper, Knobe and Prinz (2008) had conducted several experiments examining people's tacit theory of group minds. In one study, they presented participants with a number of sentences that ascribed either intentional or phenomenal states to a collective (Acme Corporation), and then asked people how natural or unnatural those sentences sounded. People rated sentences that attributed intentional states to the group – sentences like “Acme Corp. believes that its profit margin will soon increase” or “Acme Corp. intends to release a new product this January” – as natural sounding. But they rated phenomenal state ascriptions, like “Acme Corp. is now experiencing great joy” or “Acme Corp. is getting depressed,” as extremely unnatural sounding. As Knobe and Prinz report, “the most acceptable phenomenal state was still deemed less acceptable than the least acceptable non-phenomenal state” (75). Knobe and Prinz conclude that the ratings of naturalness “indicate that people are unwilling to ascribe to group agents states that require phenomenal consciousness” (75). (See Huebner this volume and Sytsma this volume for further discussion of this and related studies.)

One implication of Knobe and Prinz's finding is that people are willing to speak of groups as intentional agents. This accords with much armchair reflection on the way we talk about collective intentionality. Gilbert, for instance, writes that, “People speak – without any sense of fantasy or metaphor – of the judgments of courts, of the beliefs of unions, families, nations, and so on” (2002, 121). And Clark contends that “beliefs and desires are cited in explanations of corporate behavior with the same degree of success and legitimacy as they are in explanations of human behavior” (1994, 410). Often these facts about use are taken to reveal that people actually think of groups as intentional agents. But how natural people find group mental state ascriptions counts as good evidence for views about the folk metaphysics of mind only insofar as one assumes that people mean to communicate what these mental state ascriptions literally say. Perhaps such ascriptions are not meant as literal attributions of mental states to groups over and above their individual members, but are rather appropriately said because they are thought to identify the mental states of the individuals that constitute the group.

In a recent paper, Phelan, Arico, and Nichols (2013) used the paraphrase method to challenge the assumption that people mean to communicate what group mental state ascriptions literally say. In one of their studies, Phelan *et al.* divided participants between three conditions. Each condition included four test sentences ascribing different states to groups, as well as four

other filler sentences. For example, in an intentional state condition, participants read the following sentence:

After Boeing lost the Army contract, Boeing expected to have to lay off workers.

In a phenomenal state condition, participants read this sentence:

After Boeing lost the Army contract, Boeing felt anxious about having to lay off workers.

And in a nonmental state condition, participants read this sentence:

After Boeing lost the Army contract, Boeing needed to lay off workers.

For each sentence, participants were asked to replace the second, underlined instance of the group name with either the singular pronoun “it” or the plural pronoun “they.” The basic idea was that if people understand any of these sentences as ascribing the relevant state to the entity over and above the individual members that compose it, then they will choose the singular pronoun paraphrase. However, if people really take these sentences as ascribing mental states to the members that make up the group, then they will be more likely to paraphrase the group name with the plural pronoun. If Knobe and Prinz (and other theorists in the collective intentionality literature) were correct that people really think of groups as capable of intentional states of their own (and on the further assumption that groups can really occupy nonmental states), then people in the intentional and nonmental state conditions should offer similar responses, choosing the “it” paraphrase for most of the test utterances. Only those in the phenomenal state condition should choose the “they” paraphrase most frequently. On the other hand, if people reject collective intentionality, believing that only individuals can occupy mental states, then intentional and phenomenal state attributions should pattern together, with people often choosing the “they” paraphrase in those conditions. People should choose the “it” paraphrase only for nonmental ascriptions. Phelan *et al.* found the second pattern, a pattern indicative of distributivism about group mental states. These findings suggest that when people talk or hear about Acme Corp.’s beliefs, they understand these sentences to be attributing beliefs to the employees that constitute Acme Corp. People’s utterance and acceptance of group intentional state sentences apparently do not constitute good evidence that ordinary people accept collective intentionality.

Recently, the paraphrase method has been applied to other targets. For example, Buckwalter (forthcoming) argues on the basis of paraphrase study findings for the pragmatic defeasibility of Hazlett’s (2010, 2012) counter-examples to the claim that only true things can be known. But the pragmatic turn within experimental philosophy has only just been made, and there are undoubtedly many findings from conceptual experiments within experimental and traditional armchair philosophy that might admit of a pragmatic explanation.

27.4 Conclusion

In this chapter, I have offered a delineation of the domain of experimental pragmatics and discussed two of the many projects that fall within this broad domain. I have discussed some of the diverse methods that have been used to investigate scalar implicatures. And I have identified two methods for testing pragmatic explanations of the results of conceptual experiments. My primary hope is that experimental philosophers working within this domain conceive of themselves as engaged in a larger, theoretical project, that they recognize the way in which the theoretical considerations of linguistic pragmatics inform their work, and that they learn from the diverse methods employed by linguists and psychologists.

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Notes

- 1 See, for example, Geurts (2010).
- 2 By Searle (1979), Martinich (1984), and others.
- 3 For presupposition, see Karttunen (1973); for pragmatic slack, see Lasnik (1999); for the offensiveness of slurs, see Whiting (2013), though this is strictly an account of slurs in terms of conventional, not conversational implicature. See Hom (2008) for further discussion of pragmatic accounts of racial epithets.
- 4 See, for example, Bach (1994), who argues that “what is said” or sentence meaning is content that is syntactically correlated with the spoken words, but that such content is pragmatically enriched in light of contextual information to generate a primary proposition, or a “conversational implicature,” in Bach’s terminology.
- 5 Jason Stanley has argued for this view in a number of important articles. See Stanley (2000) for an early statement of the position.
- 6 This is the position endorsed by relevance theorists, such as Sperber and Wilson (1996) and Carston (2002).
- 7 See Phelan (2014) for a more thorough approach to experimental pragmatics proper.
- 8 A reviewer for this chapter points out that it is now “widely recognized that numerals are not scalar expressions in the same sense as ‘some,’ ‘most’ or even ‘or’ (there is some debate about ‘or’ as well),” but concedes that, “numerals make for excellent examples.” With the excellence of these examples in mind, I focused on the more standard scalar implicatures in Phelan (2014). Here, I leave the numeral example in tact, but see Geurts (2010) for discussion of this reviewer’s excellent point.
- 9 See Noveck and Reboul (2008), Geurts (2010), Katsos and Cummins (2010), and Phelan (2014), for more complete surveys of this literature.
- 10 See Geurts (2010, 91–93) for a more complete review of this intricate study. For some test sentences, results actually corresponded to the predictions of *syntactic correlation* views. However, reading times for these sentences are also readily explicable according to *contextualist* and *implicature* views, whereas results like those discussed earlier do not seem explicable according to *syntactic correlation* views. Thus, *syntactic correlation* views seem to conform least well to the totality of the evidence. But, see Huang and Snedeker (2009) for careful criticisms of both Bott and Noveck (2004) and Breheny, Katsos, and Williams (2006).
- AQ1 11 Other studies that cast doubt on *syntactic correlation* views include Bezuidenhout and Cutting (2002), Noveck and Posada (2003), Bezuidenhout and Morris (2004), De Neys and Schaeken (2007), Geurts and Pouscoulous (2009), Pijnacker *et al.* (2009), and Grodner and Sedivy (2011).
- 12 What contextual knowledge would suggest the derivation of the scalar information in this instance? Presumably, the knowledge that if there are two girls to which one could be referring, and one of the girls has all of something (the soccer balls), whereas the other has only some and not all of something (the socks), using the phrase “the girl with some” would be suboptimal and confusing if one was talking about the girl with the soccer balls.
- 13 See Phelan (2014) for a discussion of some of this work.
- 14 In reply to this argument, we might point out that it doesn’t much matter if some limited subset of participants’ responses were guided by pragmatic considerations, since the empirical studies at issue aggregate the responses of a large number of participants. In other words, the worry from survey pragmatics only has bite if it generalizes to most survey responses. This is correct, so far as it goes. But, it ignores the fact that pragmatic theory is intended to apply to human communication quite generally. If pragmatics has general applicability, then there is good reason to suppose that the pragmatic consider-

ations that influence one participant's response in a survey-context will influence other participants' responses. And, indeed, as discussed below, experimental philosophers have been uncovering evidence for the generality of pragmatic effects. (See Section 4.2 of Sytsma and Livengood forthcoming for discussion of these points.)

- 15 Although they rarely acknowledge the connection, these experimental philosophers are contributing to research on survey pragmatics, developed by psychologists like Norbert Schwarz (1995, 1996) and others.

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