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Book review

Review of Pragmatics: A Multidisciplinary Perspective, Louise Cummings. Edinburgh University Press, 2005, 336 pp., ISBN: 0-7486-1682-9

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This book makes the case that the relatively new field of pragmatics has an inherently multidisciplinary nature, with strong relationships with other fields of study including, among others, philosophy, linguistics, psychology, cognitive science, artificial intelligence and language pathology. Cummings argues convincingly that the study of pragmatics should be influenced by, and has much to offer to, those related disciplines. After outlining the basic concepts and theories of pragmatics in Chapter 1, she explores its interdisciplinary relationships in subsequent chapters. The book contains an extensive bibliography and a comprehensive index.

Pragmatics can be defined briefly as "the context-dependent assignment of meaning to language expressions used in acts of speaking and writing" (Allan, 2001, p. 4). More fully,

> [P]ragmatics can be taken to be concerned with aspects of *information* (in the widest sense) conveyed through language which (a) are not encoded by generally accepted *convention* in the linguistic forms used, but which (b) none the less arise naturally out of and depend on the meanings conventionally encoded in the linguistic forms used, taken in conjunction with the *context* in which the forms are *used* [emphasis added]. (Cummings, p. 2, quoting Cruse, 2000)

As a modern field of study, pragmatics originated with writings of the philosophers Grice (1957, 1975), Austin (1962) and Searle (1969). In those and subsequent works they elaborated the basic pragmatic concept of *speech act*, as well as various conditions and requirements for the successful performance of speech acts, *presuppositions* associated with them, and *implicatures* arising from them, all of which were outside the scope of structural linguistics. In addition to studying speech acts, pragmatics overlaps linguistics in the study of *deictic* expressions, which refer to aspects of the linguistic, spatial, temporal and interpersonal context of utterances.

In Chapter 2 Cummings examines theories of meaning in three categories: *psychologistic* meaning ("meaning in the mind"), *referential* meaning ("meaning in the world") and *social* or *pragmatic* meaning ("meaning in action"). She shows how each of these three types of meaning depends on the other two. She also explores how the currently dominant ideas in the psychologistic approach to meaning – namely a *computational theory of mind* that presumes a *language of thought* – relate to the study of pragmatics and to the adjacent disciplines listed earlier.

Chapter 3 deals with inferences of various kinds and how they can be used to assign extended meanings to speech acts. These include *deductive* inferences of the kind studied in classical logic, *elaborative* inferences based on a variety of types of knowledge and contextual relationships, and *conversational* inferences based on principles of conversational pragmatics.

Elaborative and conversational inferences often use *arguments from ignorance*. These can include default inferences about a situation which are assumed to be valid in the absence of contrary evidence, and conversational inferences based on a default assumption, again in the absence of contrary evidence, that a speaker is following cooperative conversational principles.

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For example, suppose the question "Would you like to pet my dog?" is asked with normal intonation (rather than, say, an intonation that could suggest the question was skeptical), by an apparently friendly stranger with an apparently friendly dog, of an 8-year-old child who is accompanied by his or her mother and who looks interested in the dog. Then the mother, and maybe the child, can be expected to infer at least two things: that the speaker is making an invitation and that the speaker believes that the dog will not harm the child.[1] The two inferences are both elaborative and conversational, based on world knowledge and partly justified by the argument from ignorance that, in the absence of other evidence, the speaker is observing the cooperative conversational requirement to provide just as much relevant information as is required for the situation (Grice's Maxim of Quantity). For if the speaker believed the dog might harm the child, s/he would be expected at least to provide relevant cautionary information. ("Be careful. He sometimes gets a little rough.") On the other hand, if the situation suggests that the dog is harmless, if the speaker believes that to be the case, and if the mother and child don't seem afraid, it would be unnecessary (though acceptable) for the speaker to issue an explicit reassurance.[2]

In Chapter 4 Cummings provides a summary and a philosophical criticism of Sperber and Wilson's (1995) *relevance theory* . That theory is an attempt to replace all of Grice's conversational principles and maxims by a single principle of relevance, combined with a claim "that the implicature of an utterance in communication is that proposition which produces the maximum number of contextual implications for the minimum amount of processing effort." (p. 113) A brief summary of Cummings's criticism of relevance theory is provided by the following passages from the book:

> Although they explicitly reject the logical concept of confirmation and argue for a non-logical, or functional view in its place, their approach amounts to the logical account in a somewhat different guise. (p. 131)
> [I]n the case of utterance comprehension at least...no set of deductive premises is ever fully circumscribed in the sense of containing all the information that is rele-

vant to the comprehension of an utterance – for every set of such premises, some factor that is not part of the set can nonetheless be shown to be integral to the comprehension of that utterance. (p. 130)
> The crux of the problem for Sperber and Wilson is that at every level of cognitive functioning, the processing that occurs is highly contingent on the strategies and problems of the moment... – there appears to be no level of our cognition that proceeds in an entirely unreflective and automatic manner. (p. 124)
> [I]t is difficult to see how Sperber and Wilson's functional concept of confirmation can even begin to assimilate [the indefinably large range of factors to be considered in determining relevance to an individual] within its logical structure. Regardless of where we decide to erect a boundary in the network of factors involved... – and identify that boundary with a logical operation in Sperber and Wilson's deductive device – the factors that constitute the relevance of new information to an individual extend necessarily beyond that boundary... (p. 132)

Cummings concludes the chapter by saying

> [W]e have not set out to eliminate the very possibility of describing and explaining the processes of cognition. ...[The] limited criticism of one explanatory approach to cognition...has yielded valuable insights...[which] embody a truly pragmatic spirit. ...This pragmatic spirit demands the reconnection of concepts with other concepts, of the logical entries of concepts with their encyclopaedic counterparts and of mental representations with the rules that operate upon them. The interconnections that are established through these various reconnections are the proper place to begin a study of cognition... (p. 134)

In Chapter 5 Cummings provides an exposition and critique of the modular theory of mind favoured by many contemporary cognitive scientists and philosophers of mind: that the mind consists of a number of innate, primary, domain-specific cognitive modules which are informationally encapsulated and computationally autonomous, and which provide input to a central system that is not domain-specific and is not informationally encapsulated. She argues that observations about pragmatics, and inferences from those observations that are similar to but extended from those of Wilson and Sperber (1991a, 1991b), provide a convincing challenge to such a modular theory of mind. Instead, she argues, an adequate theory of mind must satisfy three criteria arising from the study of pragmatics: (1) Complete Informational Integration – that knowledge representations in the mind should be "informationally continuous," not possessing properties in isolation from the whole system of knowledge. (p. 159) (2) Informational Regression – that "every item of knowledge must presuppose at least one further item of knowledge." (p. 159) (3)

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[1] Whether the mother is willing to accept and share that belief is a separate issue which can depend on other aspects of the situation, such as the apparent age and maturity of the speaker and whether or not the speaker, if adult, is also accompanied by children.

[2] From this example and imagined variations of it one can see how important the entire pragmatic context can be in determining what inferences a hearer can reasonably draw from an utterance, and what relevant information a speaker can appropriately convey by such expected inferences, rather by stating it explicitly. The example also suggests that inferences drawn from utterances are not fundamentally different from inferences drawn from other aspects of a situation. Finally, the example shows that the applicability of the cooperative principle itself depends on the situation. For if the stranger appeared untrustworthy or threatening rather than friendly, it would not be reasonable for the mother to apply it.

Informational Plasticity – that the mind's system of knowledge "should respond to internal and external factors by making changes of various magnitudes" in a manner that is functionally equivalent to the neural plasticity of the brain. (p. 160)

Chapter 6 deals with argumentation and fallacies. First, Cummings describes six frameworks for argument, proposed by theorists from a variety of disciplines, namely: semantic, epistemic, dialectical, psychological, rhetorical and pragmatic frameworks. Next, she provides a critique of the pragma-dialectical analysis of fallacies proposed by van Eemeren and Grootendorst (1995), failing to substantiate their claims that it is more systematic and more refined than the standard treatment of fallacies in argumentation.

Cummings concludes Chapter 6 by discussing the contribution of pragmatic processes to the reconstruction of arguments (including identification of unstated premises and conclusions) and the evaluation of arguments, from their forms as utterances and the situations in which they are used. In doing so she points out that utterances in arguments are only a special case of utterances in general. Regarding argument reconstruction she says, for example, "An argument analyst can only accurately supply missing premises in an argument by first establishing an arguer's argumentative intention." (p. 183) Regarding argument evaluation, she says,

> First, deductive validity is no longer deemed to be a universal criterion of argument acceptability. Indeed, the whole of formal logic is of questionable relevance to the evaluation of argument under a contextual approach. We are now much more interested in evaluating arguments according to pragmatic criteria... Second, with pragmatic factors like purpose at the centre of argument evaluation, many arguments, that had previously been deemed to be fallacious, are now judged to be rationally acceptable within certain contexts of use. (p. 186)

Chapter 7 deals with Jürgen Habermas's theory of communicative competence, consisting of a *universal pragmatics*, a consensus theory of truth, and an ideal speech situation, as part of a larger theory of social action. Cummings criticises Habermas's theory in a manner explicitly similar to Hilary Putnam's criticism of logical positivism – arguing specifically that, while the theory purports to provide a rational self-contained explanation of social communication, including forms of acceptable argument, the case for the theory relies on metaphysical (i.e., non-rational) assumptions which are necessarily outside the theory itself.

Chapter 8 explores both what pragmatics has to offer to the study of artificial intelligence (AI) and what artificial intelligence can offer for the study of pragmatics. Regarding the first of these, Cummings proposes and defends four criteria for a pragmatically acceptable AI model of language processing:

Critierion 1: *Syntactic and Semantic Representations*. Any computational characterisation of these representations must allow permeation by pragmatic factors (features of context, stored knowledge, etc.) (p. 215)

Critierion 2: *Knowledge Representation*. The knowledge that is implicit in utterance interpretation must permit of representation in computational terms. Such representation must accommodate the different types and large amounts of knowledge that are involved in utterance interpretation, as well as the often incomplete and inconsistent nature of this knowledge. (p. 217)

Critierion 3: *Reasoning*. A process of reasoning must operate on, and derive implicatures from, represented knowledge. Certain properties of implicatures – their cancellability and non-detachability – are suggestive of the nature of this reasoning process and must be captured by any computational model of this process. (p. 218)

Critierion 4: *Rationality Principle*. Any computational characterisation of language processing in general, and of utterance interpretation in particular, must include some account of why speakers want to communicate at all. This motivating principle of rationality must also be capable of constraining the function of the computational system. (p. 219)

With regard to what AI can offer the study of pragmatics, Cummings discusses how some current computer programs for processing natural language incorporate pragmatic principles, at least implicitly, in directing the parsing of sentences, in the representation and manipulation of knowledge, and in the recognition of plans. In the area of knowledge representation, she says, pragmaticists and AI researchers have much to learn from one another:

> It is clear that with its advanced state of knowledge of non-monotonicity and of techniques such as defaults and closed-world assumptions, AI has much to contribute to pragmatics on the question of the non-monotonicity of implicatures. ...At the same time, AI could achieve considerable refinement of its techniques of non-monotonic reasoning through the study of this most defeasible of pragmatic concepts. (p. 242)

Regarding plan recognition and its use in utterance interpretation, Cummings observes how pragmatic principles of conversational cooperation and relevance, applied to shared situational and background knowledge, are often crucial to the appropriate disambiguation of plans.

Cummings ends Chapter 8 by asking whether AI is even possible in practice. She answers the question negatively, partly by citing Putnam and, indirectly, Noam Chomsky:

> As Putnam sees it, the problem for AI is that human intelligence presupposes the whole of human nature and nobody has the remotest idea what a formalisation of human nature would even look like, let alone have achieved such a formalisation... (p. 245)

The problem that besets AI in natural language as much as in induction is that the knowledge of these domains presupposes our entire intellectual capacity and, ultimately, the whole of our nature. Putnam makes this same point through his reporting of a conversation with Chomsky: "Language using, he [Chomsky] once put it to me in conversation is not a *separable* ability of human beings: you can simulate baseball-throwing without simulating total human intellectual capacity, but you cannot simulate language-using – even language-using in a fixed context, such as going to the store and buying some milk, without simulating total human intellectual capacity." (p. 247)

While I share the negative assessment of the possibilities for general artificial intelligence including broad understanding of natural language – particularly of the kind that can satisfy Turing's famous test – I am more optimistic about the prospects for special-purpose natural language understanding. In fact, the study of pragmatics suggests that pragmatically and semantically restricted situations provide a natural way to limit the scope of AI systems that use natural language.[3] Human users' conformity to cooperative conversational principles in such a situation will normally prevent them from using irrelevant utterances in the situation. If a person is using English to, say, make routine travel arrangements with a special-purpose computer program, or ask such a program about the weather, or command a household robot, s/he should, knowing the pragmatic limitations of the machine, easily be able to learn not to stray far or often outside its pragmatic and semantic capabilities.

The last substantial chapter of the book, Chapter 9, deals with language pathology and pragmatics. I found this a very interesting area, one that I knew little about. Like all pathologies of language, pragmatic pathologies provide important insights into normal language behaviour.

First, Cummings notes, the clinical linguistic literature on pragmatic disorders "is truly comprehensive – every pragmatic concept and process that we have examined in this book is investigated to some extent by clinical linguistic studies." (p. 254) Second, she observes that while language disorders sometimes involve faulty pragmatics, "In other disorders, an unimpaired component of pragmatics can be seen to compensate a further, impaired component." (p. 254)

Specifically, Cummings surveys clinical studies of language disorders involving speech acts, context, deixis, listener knowledge, conversational maxims and implicature, other inferences, non-literal meanings, and conversational and discourse analysis, as they occur in people with developmental language disorders and learning disabilities, including autism and Down's syndrome, as well as people with schizophrenia and people with brain damage caused by disease processes such as Alzheimer's or by closed-head injuries. She discusses the pragmatic aspects of the disorders surveyed and how those differ from but also relate to phonological, syntactic and semantic disorders of language. Among other things, she describes interesting pragmatic differences between left-hemisphere and right-hemisphere brain disorders.

Having noted that clinicians of language already make considerable use of concepts from pragmatics, Cummings says that "most pragmaticists have been slow to acknowledge the potential benefits to pragmatics of clinically oriented investigations." (p. 297) She concludes the chapter by identifying two main ways in which clinical studies can provide new insights for the study of pragmatics:

1. By helping to understand the cognitive substrates of pragmatics. "These substrates can be linked in turn to other substrates and to yet further pragmatic phenomena. Is only by establishing a network of interconnected cognitive substrates and pragmatic notions that we can expect to obtain a well-developed conception of the communication–cognition interface." (p. 297)
2. By helping to understand the substrates of pragmatic phenomena in language structure. "However, identifying structural substrates is not an easy task...because in many of the disorders we have examined, several aspects of structural language are usually impaired at once...[and] in these disorders, cognitive deficits can act as a confounding variable...." (p. 297)

The book ends with a short chapter in which Cummings first summarises ways in which neighbouring disciplines can contribute to the study of pragmatics:

• philosophy in providing new ideas of inference and "assum[ing] an ongoing, regulative role" (p. 308);
• psychology in providing relevant models for pragmatic concepts and in testing pragmatic phenomena in human subjects;
• artificial intelligence in providing experience with representation of knowledge, and reasoning based on such knowledge representations, across a wide range of applications;
• language pathology in continuing to provide insights into the cognitive substrates of pragmatic phenomena.

Finally, Cummings identifies some other disciplines, such as cultural anthropology, neurolinguistics and game theory, as well as topics within the related disciplines already discussed, that can contribute further insights into pragmatics.

Considering that the purposive use of language has been of crucial importance in our evolution biologically and culturally as a species, it is surprising to me that the central role of pragmatic phenomena in human communication has been recognised only recently in the study of language.

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[3] Although Chomsky is probably right that the situation of going to the store and buying milk would not be an appropriate one.

Because of that central role, the relationships of pragmatics with other disciplines involving study of language and cognition should become more widely understood. Cummings's book is an important effort toward accomplishing that objective.

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