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Grice's work on logic and conversation is a famous episode of underground publication. The lectures circulated only in unauthorized manuscript form for five years after they were originally delivered in 1967, and were only published in fragmentary form until 1989. In this paper I will attempt to briefly discuss some philosophical background questions, mostly concerning the interesting question posed by Green (1987) "Why are there implicatures?"

Although Grice (1989:39-40) offered a number of tests for conversational implicatures--cancellability, detachability etcetera--he regarded these as only partial tests: "Indeed I very much doubt whether the features mentioned can be made to provide any such knockdown test, though I am sure that at least some of them are useful as providing a more or less strong prima facie case in favor of the presence of a conversational implicature" (43).

It is important therefore the useful test should not be confused with his official definition (1989:30-1): "A man who, by (in, when) saying (or making as if to say) that p has implicated that q, may be said to have conversationally implicated that q, provided that (1) he is to be presumed to be observing the conversational maxims, or at least the Cooperative Principle; (2) the supposition that he is aware that, or thinks that, q is required in order to make his saying or making as if to say p (or doing so in those terms) consistent with this presumption; and (3) the speaker thinks (and would expect the hearer to think that the speaker thinks) that it is within the competence of the hearer to work out, or grasp intuitively, that the supposition mentioned in (2) is required."

Two points are of special importance here. First, note that Grice requires that the hearer be able to work out the steps that lead to the conversational implicature. In the event that the requisite argument of the form described above cannot be provided "the implicature (if present at all) will not count as a conversational implicature; it will be a conventional implicature" (Grice 1989:31). This means that an account of reasoning will eventually have to play a significant role in the analysis and assessment of conversational implicatures.

In evaluating Grice's claims about possible defenses of the classical logician's identification of the material conditional with *if-then* in English, the issue of distinguishing conversational from conventional implicatures is critical. Strawson (1986) has argued that a better account of *if-then* in English is obtained by seeing it as a 'ground consequent' relation between the antecedent and consequent.

The second point to emphasize is that the maxims or at least the Cooperative Principle must play a significant role in the argument. Some authors (Kasher 1976) have complained that very little conversation is cooperative. In fact, Grice was quite clear that the common ends that he envisioned might be quite vague or abstract and allowed many other motives to enter the conversational enterprise: "...we should recognize that within the dimension of voluntary exchanges (which are all that concern us) collaboration in achieving exchange of information or the institution of decisions may coexist with a high degree of diversity in the motivations underlying quite meager common objectives" (1989:369).

It may be useful to compare a stereotypical example of a situation which involves a high degree of cooperation, as when two persons wish to go to an airport to catch a plane with one driving and the other providing navigational directions, with situations that involve a degree of cooperation and a considerable degree of competition or disagreement. An intermediate case would be one in which both have a strong preference that they have dinner together at a mutually agreed upon restaurant, but have quite different preferences as to the kind of restaurant. Here there is a common goal but one that is not fully specific as to the way in which it is to be achieved and the main point of the conversation might be to specify that goal by providing relevant information or altering someone's perception of the alternatives or by changing their preferences.

In some cases, the cooperation with the interlocutor might be a superficial one imposed by an attempt at coordination with a third party. Professor Gumperz (this volume) presents two examples in his paper, one an instance of cross-examination in a courtroom, the other of a political debate. In both cases the protagonists have directly contrary interests and any gain by one is a loss by the other. Although in such cases the parties have directly opposed interests, they are constrained to carry on an interchange with a reasonable degree of cooperation and civility because each wishes to persuade the non-participating audience (jurors or listeners) of the correctness of their views and to do so requires at least some degree of cooperation in the conversation. Blatant failure to answer a question or striking the other participant with a chair is usually disastrous to achieving the persuasion of audience that is desired.

Some cases are more mixed. At present the major league baseball owners and players are engaged (through their intermediaries) in a conversation which is somewhat cooperative. The common goal is to reach a labor agreement which will be mutually agreeable and which will allow a season of games to be played this summer. If no games are played the owners make no profits and the players receive no salaries, so they are in agreement in wanting to avoid that mutually unpleasant outcome. However, within the range of alternative outcomes which involve some sharing of income, they are strictly antagonistic.

A second reason for the existence of implicatures has to do with features, some accidental and some not, of the lexicon. Some writers seem to suggest that being more informative requires a longer statement, and often it does. But there are also many cases of choice of lexical item which do not. The noun *cat* is both shorter and more informative than *mammal*. And thus the use of the latter very longer and less informative noun conversationally implicates that the speaker does not know more specifically which kind of mammal is in question.

This is related to the fundamental fact that language is general, i.e., nonspecific. When I ask for dessert, or an ice cream cone, the utterance has a semantic generality, but any ice cream that I buy or sell or consume must be totally specific as to flavor amount, taste, age and so on. Since almost all linguistic items are non-specific to some degree, the choice of one level of non-specificity rather than another always has potential significance.

The questions of with whom one is cooperating and for what goal is much more complex when conversations involving more than two persons are considered. In Rundquist (this volume) dinner conversations between families consisting of two parents and two children were analyzed for implicatures. In such situations there is an ongoing goal of the family unit to function as an appropriate unit, but the interpretations that the various individuals give to that phrase will differ considerably, just as the phrase "mutually agreeable labor contract" has rather different meanings for players and owners. Moreover the various subsets of the family, the two parents, the two children, the same/different sex parent and child dyads each have their own goals and these may conflict with those of other subunits. The entire topic of group and shared goals has received virtually no discussion, but appears to be a very significant topic for understanding the more complex realities of implicatures (Tuomela 1990).

Larry Horn (1984) has suggested a taxonomy of conversational principles into two categories following general principles of Zipf's. He uses labels Q and R to correspond to "...evoke Quantity ... and Relation while leaving open the extent to which my principles map onto these two maxims" (1984:13). His principles are:

(1a) The Q principle (Hearer-based):
MAKE YOUR CONTRIBUTION SUFFICIENT...SAY AS MUCH AS YOU CAN
(Given R)

(1b) The R Principle (Speaker based):
MAKE YOUR CONTRIBUTION NECESSARY...SAY NO MORE THAN YOU MUST
(Given Q)

The project of analyzing the conversational maxims into more general or fundamental principles is certainly an interesting one and Grice was probably too concerned with making the maxims isomorphic to the Kantian categories rather than with their nature and relations. He remarks himself (1989:371-2) that the maxims presented are neither so coordinate nor so independent as the form of presentation suggested.

Nonetheless, I fear that the taxonomy that Horn is proposing may be misleading (I do not suggest that he is misled, but readers may be) because I think that it obscures two essential points. The first is that in considering the speaker based principle he suggests, or perhaps accepts Zipf's suggestion, that speakers need only be concerned with speaking truly and thus. But Grice emphasizes that speakers are performing social actions and have more concrete and important goals than maintaining their reputations as truth speakers, even though the latter is certainly of importance. Speakers typically want to achieve some specific effect on the hearer(s) and if this intended effect is specific, then not any old truth, or any undifferentiated truth, is adequate. If I want you to tell me how to get to the airport then I had best frame a direct question involving the airport or at least make a statement about the airport, airports generally or perhaps planes to catch, if I am intending to acquire the required information. In particular circumstances, of course, an apparently unrelated statement such as "It's 4:30" or even "It's Saturday" may suffice if the hearer (and context) provide the necessary connection.

And on the other side, the hearer does not want reams of information if a page will suffice. Cognitive scientists now regard it as a platitude that we are information processors, but probably do not sufficiently emphasize the extent to which our processing must consist of filtering. In the case of perception our evolution given sensory systems are admirably fitted for the purpose of eliminating a very high percentage of the available information at any time and focussing on the small percentage of information which is (generally) of the greatest importance. The mechanisms by which, for example, we manage to hear our name mentioned in one of many simultaneous conversations to which we were not paying attention is a familiar but still poorly-understood illustration.

Still I suspect, though I am quite uncertain how one might prove, that we are much less efficient at sorting through large quantities of orally presented information to find a small quantity of particular interest than we are at processing visually presented information. This may be a function of the nature of the task. When reading written material we are rather better at the task, but of course in that situation we have the option of reconsidering something that had been previously scanned or of stopping at a particular point, whereas in conversation although we can direct our attention we cannot (usually) direct the flow of the other's utterances.

Note that Grice's definition picks out the conversational implicatures from among the whole class of implicatures of a given utterance. Thus it is not a direct objection to his definition that he has not characterized the latter class, and some objections to his definition as too inclusive may be met by arguing that the problematic statements are not implicatures at all. For example, almost every statement requires for its truth the existence of physical objects and the speaker can expect hearers to realize this, if they reflect upon it, but it is not evident that this is an implicature of such utterances.

But as part of the larger project of applying the Gricean formulations to utterance we will eventually need a characterization of implicatures generally. In a previous discussion of Grice's work I suggested that at least one restriction would be that matters which are common ground between speaker and hearer would be ruled out as trivial

(Grandy 1989). This would rule out both general information commonly known, as well as matters that are idiosyncratic from a general point of view but common knowledge to this particular pair.

However, Robert Fogelin, in discussion, has produced a counterexample to my suggestion as follows: *A* is icing a cake and makes a mess of it. *B*, who has been observing, remarks "You've done a fine job!" Since the statement is obviously false the remark must be taken as sarcastic with the implicature that A has made a mess of things. But that is obvious to both *A* and *B*, and it is obvious to both that it is obvious to both, etc. Yet the implicature stands.

I do think that in general common ground is not material for implicature (at least if it is in the foreground of the conversation, if some matters are overlooked they could be routinely conversationally implicated). Perhaps the right corrective in the face of the counterexample is to assert the principle with the disclaimer that in cases of sarcasm, or obnoxiousness generally, anything is fair game for implicature.

A second kind of case to be ruled out concerns mutual knowledge of general information. An example adapted from Grice is:

A: Has Smith been dating anyone?
B: He has been visiting New York every weekend.

The implicature, according to Grice, is that Smith has been dating someone in New York. The problem is that there are other things which the theory seems to imply that *B* implicates. For example, it seems to imply that *B* implicates that New York is a place where people live (McCafferty 1987).

This particular implicature could be ruled out by excluding anything that was already common knowledge between the participants. Unfortunately, that exclusion does not suffice to keep out all unwanted candidates for implicature, because new knowledge may arise from the combination of background knowledge and the intended implicature. Imagine that the previous conversation takes place in Jamaica where *A*, *B*, and Smith all live. Since *A* and *B* both know that the only way to go to New York on the weekend is via Air Jamaica, *B's* response is consistent with his obeying the maxims, only if he believes that Smith flies Air Jamaica every weekend, and he can expect *A* to come to that realization. Moreover, it was not common knowledge before *B's* remark that Smith flies Air Jamaica every weekend. Thus, that proposition meets the conditions for being a conversational implicature (McCafferty 1987).

One way of responding to the criticisms would be to strengthen the third condition for conversational implicature and require not merely that the speaker think that the hearer will work out the supposition in the second clause, but that the speaker want the hearer to work out the supposition. In our last case, *B* may think, even expect, that *A* will work through to the conclusion that Smith flies Air Jamaica, but may be quite indifferent as to whether *A* does so. But *B* presumably does want *A* to come to the conclusion that Smith is dating someone.

Thus far I have been discussing some of the grounds from which implicatures arise. Another important and little explored area is the way in which conversational implicatures may disappear by being absorbed into the conventional. This is particularly relevant to some of the issues about the relation between formal logical languages and natural languages that are the most famous application of Grice's work. It is difficult to assess exactly what Grice's own position was with regard to the material conditional and natural language conditions.

Grice himself (1989:58-85) begins his lecture "Indicative conditionals" discussing the relation between *If p then q*, and in most discussions of his work no distinction is made between various forms which conditionals can take in English. Yet in a passage in

that same lecture (p.63) he distinguishes between the logical import of *If p, q* and *If p then q*:

> In fact, there seem to me to be quite a number of different forms of statement each of which has a good right to the title of conditional, and a number of which are quite ordinary or humdrum, such as "*if p, q*," "*if p then q*," "*unless p, q*," and "*supposing p, (then) q*," together with an indefinite multitude of further forms. The two forms which the strong theorist most signally fails to distinguish are "*if p, q*" and "*if p then q*"; and the strong theorist, therefore, also fails to differentiate between two distinct philosophical theses: (1) that the sense of "*if p, q*" is given by the material conditional, and (2) that the sense of "*if p then q*" is given by the material conditional. Thesis (1) seems to have a good chance of being correct, whereas thesis (2) seems to be plainly incorrect, since the meaning of "*if p, then q*" is little different from that of "*if p, in that case q*," a linguistic form which has a much closer connection with argument than would attach to the linguistic form in which the word "then" does not appear.

More importantly even on the question what his position ultimately is regarding the relation between *if p, q* and the material conditional, one must decide whether to accept his disclaimer at the beginning of Lecture II (p.16):

> ...I shall confine myself to the dispute in its relation to the alleged diversions. I have, moreover, no intention of entering the fray on behalf of either contestant.

or the bold assertion that begins Lecture III (now Chapter 4, p.43):

> I am considering myself to have established, or at least put up a good case for supposing, that if any divergence exists between "if" and "QQ," it must be a divergence in sense (meaning, conventional force). I now aim to show, using the same material, that no such divergence exists.

Complicating the story further is Grice's discussion of generalized conversational implicatures. If a particular conversational implicature develops from situations which frequently recur, perhaps even are the normal situation, then an implicature that originally attaches separately to each occurrence may become more generally known. Thus if *if-then* is typically used in settings where the conversational implication of a connection between antecedent and consequent is present, it may become a matter of general knowledge and thus general expectation that the connection is present. Grice maintains, of course, that the distinction between what is said and what is conversationally implicated should be sustained even in these cases where the conversational implicature does not depend on specific features of the conversational exchange.

I have attempted to survey some of the sources of conversational implicature. These include the facts that we are rational social creatures who live in a complex world and require cooperation for many of our objections, that we have complex hierarchically organized lexicons as tools toward this end, that our information processing capabilities are highly limited. I have also indicated areas where further research is required to illuminate the nature of conversational implicature in general and Grice's own position in particular. Among the problems are a more thorough and explicit understanding of the role of reasoning and the potential working out of conversational implicatures, a better characterization of the process by which implicatures become generalized and a clearer grasp of the relation between general implicatures and meaning.

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