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The Problem of Grammaticality

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Grammar is in trouble and needs help. The problem is in the empirical foundations of grammatical theory construction. One writes a grammar on the basis of what are called grammaticality judgments. One judges, for example, that a sentence like (1):

(1) Fred is in debt to the tune of $500,000.

is part of English, and has a particular meaning and structure, whereas a sentence like (2):

(2) Fred is in debt to the song of $500,000.

is not part of English, and one constructs a grammar so as to account for these and potentially countless other such judgments.

As grammarians over the past fifteen years have probed ever deeper into the workings of English, the kinds of examples for which grammaticality judgments have been required have become increasingly complicated and in some cases highly contrived. For such examples, we are now finding that it is not possible by introspection or by asking one's friends or by sending out questionnaires to obtain judgments that are reliable about the grammar of those sentences.

Let me cite for illustration a particular interesting set of examples, based on the work of Jorge Hankamer.[1] Hankamer points out first that there are two separate

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processes for reducing the second of two conjoined sentences. One is called Conjunction Reduction; it is illustrated in examples (3) and (4).

    (3) The investigator examined the evidence and she found it to be inconclusive.

    (4) The investigator examined the evidence and found it to be inconclusive.

The other is called Gapping; it is illustrated in examples (5) and (6):

    (5) Sam got a raise and Ralph got a vacation.

    (6) Sam got a raise and Ralph a vacation.

The main difference between these two processes is that Conjunction Reduction deletes material from the beginning or the end of the second conjunct, whereas Gapping deletes material from the middle.

    It is theoretically possible for Conjunction Reduction and Gapping, as so defined, to create ambiguity. That is, starting from two distinct second conjuncts, if Conjunction Reduction is applied to one and Gapping to the other, the results may be the same. Thus, consider first the derivation of (8) from (7) by means of Conjunction Reduction:

    (7) Mary takes Nancy seriously, but Mary takes Ollie lightly.

    (8) Mary takes Nancy seriously, but Ollie lightly.

Now consider the derivation of (10) from (9) by means of Gapping:

    (9) Mary takes Nancy seriously, but Ollie takes Nancy lightly.

    (10) Mary takes Nancy seriously, but Ollie lightly.

Obviously (8) = (10), so that the account given so far predicts that this sentence is syntactically ambiguous, its meanings being that of (7) and that of (9). But if you ask people what this sentence means, almost invariably you will be told that it means the same thing as (7), and even if you ask them whether it could mean (9), very few will give their assent. From such reports of grammaticality judgments, Hankamer concludes that (10) cannot be derived from (8) by Gapping, and that in general Gapping must be constrained so as never to be applicable in case it yields a structure which could otherwise have been derived by Conjunction Reduction.

    Such a conclusion, however, has far-reaching implications for grammatical theory. It requires, as Hankamer points out, a theory of grammar to be able to determine the existence of alternative derivations of the same surface sentence from different underlying representations. For various formal reasons, this is a highly undesirable state of affairs, but in the absence of reasonable alternatives there is nothing one can do but accept it.

    I would like now to present a reasonable alternative. Traditionally, the problem of the avoidance of ambiguity has been in the domain of the theory of rhetoric. Thus, an ambiguous construction such as is found in examples like (11):

    (11) John saw the elephant with binoculars.

are less highly valued rhetorically than synonymous sentences without such ambiguities. Moreover, it is known that for some ambiguities, only one interpretation is perceptually salient, as in examples like (12):

(12) Some doctor sees every patient.

In (12), the salient interpretation is that there is some one individual doctor who sees every patient; there is another possible interpretation, however, also, namely that for every patient, a doctor (not necessarily the same one in each case) sees him. Again, we may properly think of the empirical problem of determining the relative perceptual salience of the interpretation of sentences as a problem of rhetoric.[2]

Now, I believe that what we have in the case of Hankamer's examples (7)-(10) is salience of one interpretation being so much greater than the other, that the other is totally suppressed, perceptually. One does not, and perhaps·even cannot notice that (10) is grammatically related to (9). However, it is possible to adjust things somewhat so that in analogous examples, one can and does notice the interpretation that comes about as a result of Gapping. Consider the following examples (13)-(16):

(13) Mary takes life seriously, but Mary takes Ollie lightly.

(14) Mary takes life seriously, but Ollie lightly.

(15) Mary takes life seriously, but Ollie takes life lightly.

(16) Mary takes life seriously, but Ollie lightly.

Here, (14), which is the result of applying Conjunction Reduction to (13), is identical to (16), which is the result of applying Gapping to (15). But now, if one asks for gramaticality judgments concerning this example, one finds that the result of applying Gapping is not only acceptable, but is more salient than the result of applying Conjunction Reduction. Thus Hankamer's strong contention that Gapping is disallowed just in case it leads to a surface string that also results from Conjunction Reduction is false. (Note that example (6) is similarly ambiguous).

On the basis of these examples, we can at least speculate how a theory of rhetoric can be used to account for the fact that one does not notice the derivation of (10) from (9), but that one does notice the derivation of (16) from (15). Basically, example (13), which is the source for (14) via Conjunction Reduction, does not display strict parallelism (one is comparing *taking Ollie* with *taking life*), (16) via Gapping, does. Thus, if parallel structures are more salient than nonparallel ones (as well as being more pleasing aesthetically—in fact one may be justified in saying that one's pleasure in grammatical parallelism is a consequence of its relative ease of perceptibility), then it would follow that (16) is more salient than (13) as a source for the ambiguous example (14) = (16). If some such explanation ultimately can be shown to be correct, then we have freed the theory of grammar from the unwanted task of having to check alternative derivations. Grammar and rhetoric, as separate

[2]Thus, in part at least, rhetoric depends on the insights one obtains from psycholinguistic investigations of speech perception and comprehension. For discussion of the latter see Thomas G. Bever, "The Cognitive Basis of Linguistic Structures," *Cognition and the Development of Language,* ed. by J. R. Hayes (New York: John Wiley & Sons, Inc., 1970), pp. 279-362.

components of linguistic competence, each frees the other of unnecessary theoretical burdens.[3]

What of the third component of the classical trivium, logic? Here let me be brief, but to the point. There has been a lot of discussion lately about "natural logic," the ability people have of drawing consequences from what they say. Some linguists, notably George Lakoff,[4] have argued that different grammaticality judgments about sentences may be reached by different people, depending upon their different systems of belief, and the conclusion that they draw from those beliefs together with the given sentences. Thus he argues that a sentence like (17):

(17) John is a Republican, but he is honest.

is grammatical relative to the belief that Republicans are not generally honest, but is ungrammatical otherwise. But surely this is incorrect. The grammaticality of (17) cannot be disputed, no matter what beliefs one holds. What one wants to say about cases like (17) is that certain inferences can be drawn from the truth of (17), such as that Republicans are not generally honest. In order to be able to specify the set of permitted inferences of given sentence, it may be necessary to give a detailed grammatical account of that sentence, but the grammaticality of the original sentence is quite independent of the beliefs one may have about those inferences.

In summary I contend that raw grammaticality judgments cannot be interpreted always at face value; that to obtain "true" grammaticality judgments one must at least factor out effects that are the results of the inner workings of rhetoric and logic; that each of these components of linguistic competence is richly deserving of study; and that the theory of grammar that emerges once the proper places of rhetoric and logic alongside grammar are granted may be something that we are already familiar with: the theory of Chomsky's *Aspects of the Theory of Syntax.*[5]

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[3]On this point, see also Jerrold J. Katz, *Semantic Theory* (New York: Harper and Row, Publishers, Inc., 1972), chapter 8.

[4]"The Role of Deduction in Grammar," *Studies in Linguistic Semantics,* ed. by C. J. Fillmore and D. T. Langendoen (New York: Holt, Rinehart and Winston, Inc., 1971), pp. 62-70.

[5]Cambridge, Mass.: MIT Press, 1965.