FRANCIS JEFFRY PELLETIER

OR

It is an extremely popular view among logicians and some linguists (McCawley, Hurford) that there are two distinct *or*'s in English—an "inclusive" and an "exclusive". It seems equally popular among lexicographers, experts on proper usage, and some linguists (R. Lakoff) that there is only one, the "exclusive", and that the "inclusive" is a figment of logicians' imagination. Grice ("Logic and Conversation") has shown us a way of constructing a theory of "conversational implicature" which can perhaps distinguish meaning-relations from other factors. The present paper shows how the Gricean account can be made to yield the conclusion that the only *or* in English is the "inclusive"; it also indicates other ways which will yield this conclusion, including a rather weak (or conservative) version of "conversational implicature" relying only on expectations of speakers and various psychological truisms.

Grice (1968) took to task a popular view concerning the relationship between the ordinary words of English *if*, *and*, and *or* on the one hand, and the logical connectives '$\supset$', '$\cdot$', 'v' on the other. The popular view was that there are important divergencies in meaning between the former and the latter (when these are given their standard two-valued interpretation). Grice's strategy is to develop a theory of very general "rules or guidelines of conversation" by means of which the notion of "conversational implicature" can be understood. That such "implicature" is no part of meaning is then argued on various grounds (such as that it is always "cancellable" whereas what an utterance means is constant). The argument against the popular view now runs: (a) apparent differences in meaning between the English words and the symbolic connectives are due to the fact that the English words are used in conversations with certain implicatures in effect, whereas the symbolic connectives capture only that part of the force of the English words having to do with the "tie" between the words and the world (i.e., "the meaning"); (b) differences in circumstances of the appropriate usage (e.g., '$p \supset q$' is well-formed for any sentences p and q, while 'if p, q' is normally used only when one believes there to be a non-truth-functional "connection" between p and q) are to be accounted for by means of the general theory of conversational implicature, and hence are not

reckoned as part of the meaning of the English word. Grice sees his goal as "building up a theory which will enable us to distinguish between the case in which an utterance is inappropriate because it is false or fails to be true, or more generally fails to correspond with the world in some favoured way, and the case in which it is inappropriate for reasons of a different kind." [1968, pp. 2—3].

I have some sympathy with this overall approach, but want here to point out one respect in which it constitutes a case of overkill, in the sense that the "popular view" being attacked could be refuted on more conventional grounds without recourse to the construction of a radically new theory of conversation. All we need do is go part way down this path and distinguish (as all parties do) between the expectations, beliefs, and so on, which a speaker may have when he utters some sounds, and the meaning that utterance has (on that occasion). Not all these beliefs, expectations, etc., are relevant to the meaning. For example, it may be an interesting sociological fact that most commonly when people utter

(1) I had a book stolen

they desire to convey that someone stole their book. However, this in no way implies that the surface shape (1) doesn't also mean that they paid someone to steal a book. Nor does the fact that people often can successfully communicate using "semi-sentences" imply that in a formal grammatical theory such utterances are to be counted on a par with fully grammatical sentences. One needn't go to the extreme of saying that none of a speaker's intentions, expectations, beliefs, and so on, are relevant to the meaning of an utterance (on a particular occasion) in order to point out that some (indeed many) are irrelevant.

Let us consider for a moment what *is* relevant to a theory which concerns itself with the proper semantic treatment of some portion of a natural language. One of the things we must do at the beginning is try to free ourselves from beliefs engendered in us by competing theories and to return to our pre-theoretic intuitions. A theory which fully accommodates these intuitions without having to "explain why some are really false" is surely preferable to one which must constantly do this explaining"; and for the same reason, one which has only a few such "explanations" is better than one with many. For example, a semantic theory according to which certain inferences we feel to be valid are accorded semantic validity is to be preferred to a theory which denies their validity but "explains away" the apparent validity as being "merely an accident of the pragmatics of every situation", *ceteris paribis*. And similarly, a theory which accords (say) 'not' status as a VP negation in addition, is preferable to one which treats all negations as sentential negation, since these are our (pre-theoretic) intuitions. Of course, certain theoretical considerations *can* make us decide that our intuitions are false, hopelessly muddled, or even contradictory. But we must start with them—there is nowhere else to begin. In what follows I will return to this principle again and again.

I want to argue that the meaning of the English *or* is "inclusive". In fact Grice never argues for this except perhaps by implication (when he says that the

connectives are given their standard two-valued interpretation). What he is arguing against is the view that there is always some non-truth-functional reason or ground for uttering a disjunction which is to be counted as part of its meaning. (For example, it is part of the "popular view" that in uttering a disjunction one is ignorant of the truth-value of either disjunct.) This view of Grice's is consistent with *or* being either "inclusive" or "exclusive" or indeed with any truth-functional interpretation of *or*.

Writers of elementary logic textbooks[1] (see [1] through [21]), some writers of proper usage manuals (Follett 1966), and an occasional linguist (McCawley 1968, Hurford 1974) believe that there is both an "inclusive" and an "exclusive" *or* in English. Most lexicographers (see OED, UED, WNI2, WNI3), at least one logician (see [22]), some experts on proper usage (Fowler 1971, Nicholson 1957), and an occasional linguist (Lakoff 1971), go to these extremes: "An *alternative* (or *or*) proposition contains two statements, the acceptance of one of which involves the rejection of the other ... either may be agreed to, but not both" (OED); "except for a very few possible exceptions, *or* must be exclusive" (Lakoff 1971: 142). All these writers are wrong: *or* in English is always inclusive.

Of course, this is not to say that when certain people utter a sentence such as

(2) I'll either be with Arlene or with Suzi tonight[2]

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1 For simplicity in referring to them, the logic textbooks are listed separately from the other works. While it is true that all these logic writers claim there to be two *or*'s in ordinary English, it would be misleading not to say that [1] through [4] believe than an exclusive *or* is very rare.

2 I am here treating sentences such as (2) as "reductions" of such strings as

(i) Either I'll be with Arlene tonight or I'll be with Suzi tonight.

Such practice is common in all the texts cited. More generally, it is here assumed that *or* is a "sentence connective", but that it may be realized on the surface as many other kinds of connective: e.g., a NP connective, a VP connective, an ADJ connective, etc. Of course such a general claim does not carry over to *and* (Lakoff and Peters, 1969). Furthermore it does not directly apply to such uses of *or* as

(ii) Cathy weighs less than either Arlene or Suzi

wherein the truth-conditions for *or* are more like those for *and*. (Note that (ii) is paraphrased as

(iii) Cathy weighs less than Arlene and Cathy weighs less than Suzi,

but (iii) wouldn't be a correct paraphrase with *or* in place of *and*).

However, this proposal should apply to NP's such as the subject of

(iv) The male and female employees shall be paid equally.

The subject should come from

they don't *expect* that only one of the disjuncts will be true. But as we've seen above, such expectations are not relevant to the meaning of the utterance even on the particular occasion of uttering. The *only* way to demonstrate that a given sentence employs an exclusive *or* is to imagine both disjuncts true, and see if such a state of affairs would *logically imply* the falsity of the disjunctive sentence. It is important to note the "logically implies" here: (a) if the sentence actually is employing an exclusive *or*, a description of the imagined state of affairs would logically imply the falsity of the disjunction; (b) if one could find *some* state of affairs or other (no matter how far-fetched, so long as we still have strong enough intuitions to make "true/false" and "implies" judgments) in which both disjuncts were true and yet the disjunction was not false, the *or* cannot be exclusive. Consider sentence (2): if I am out with both Arlene and Suzi, does this logically entail the falsity of (2)? Of course, if I had *expected* to be with both, I doubtless wouldn't have used (2), since (generally) a speaker will make as "strong" a claim as he can consistent with his beliefs (in this I parallel Grice's Maxim of Quantity: make your conversational contribution as informative as possible). But the facts of the case were that I went out to the bar with Arlene and we met Suzi; we three then spent the rest of the night together. It is clear that under such circumstances we would not say that (2) was false, or that I had lied when making it, or that I was in any way irresponsible in asserting it, even though both disjuncts were true. Therefore (2) does not employ an exclusive *or*.

It is important to distinguish kinds of "inclusiveness vs. exclusiveness". I defined in the previous paragraph one kind of "exclusiveness"—the kind I am interested in, where the truth of both disjuncts implies the falsity of the disjunction. It is this kind of "exclusiveness vs. inclusiveness" which the logicians, linguists, lexicographers, and proper usage experts claim to be talking of. Nonetheless, one can think of at least two other senses of a distinction which might be called by the same name: (a) where both disjuncts *are* (or: can be) true vs. where not both are (or: can be), (b) where both of the disjuncts are expected (or: not unexpected) vs. where both disjuncts are unexpected. Clearly, one and the same occurrence of *or* is "inclusive" or "exclusive" depending on which definition is used. Definition (a), while sometimes alluded to (as for example in discussions of the "law of excluded middle": see below, discussion of (4) and (5)), is not sufficiently broad in its scope to include very many *or*'s—for example future tense empirical claims like (2).

(v) [the employees [[the employees are male] or
NP S S S

[the employees are female]]]
S S S NP

Attempts to read the surface *and* in (iv) as derived from a deep *and* rather than the *or* of (v) will make it impossible even to state, in a systematic way, the conditions under which sentences containing such phrases could be true. See McCawley (1968) for such an incorrect attempt.

Definition (b) is not semantic in nature: the reference to speakers' expectations makes it a part of some other field (pragmatics?).

Latin is often pointed to as a language which has lexically differentiated "inclusive" and "exclusive" *or*'s— *vel* and *aut*. While it is difficult to determine such matters due to the dearth of native speakers of Latin, from the extant Latin literature it seems that *vel* and *aut* are used to mark the distinction (b). That is, they are used in accordance with whether the speaker expects only one disjunct will be true. In such a case, if the Latin translation of (2) were uttered, it would contain *aut*, because I did not expect I would be with both Arlene and Suzi. If events went in the manner indicated in the story, the Latin sentence would still be true despite the *aut*, since at the time of utterance I did not expect to be with both. Conversely, had the sentence been translated with *vel*, it would have been false (even if I did go out with both) since I did not expect at the time of utterance to be with both. Thus the Latin *vel* and *aut* does not mark the "inclusive vs. exclusive" distinction discussed by our modern writers. A semantical account of *vel* and *aut* would be very difficult, since the conditions for the truth of sentences employing them would seem to require reference to the speaker's beliefs. (Alternatively, though, one could give *vel* and *aut* the same semantic truth conditions and account for the choice of *vel* or *aut* on "pragmatic grounds"—as has been suggested for positive vs. negative questions in English.) My discussion is about the semantics of *or*; whether there is any occurrence of *or* in English which could be taken "exclusively" in the sense defined two paragraphs ago. The other senses of "exclusive" are a topic beyond this paper.

Consider the following example (from [18])

(3) Taxpayers must file exactly one return, but it may be a single or a joint return.

Granted, (3) would be false if taxpayers could file both a single and a joint return, but surely this is not due to *or* being exclusive. Rather it is due to the fact that the first conjunct asserts that taxpayers must file exactly one return. The second conjunct by itself does not say anything about how many returns must be filed (except there must be at least one).

A similar mistake is made by those writers who cite examples of cases where it is *impossible* for both disjuncts to be true. In both [19] and [20] these are called "exclusive *or*'s".

(4) Today is either Monday or Tuesday

(5) I was born in either Nebraska or New Mexico

and also instances of the "law of excluded middle". Can these be counter-examples to the claim that there's no exclusive *or* in English? Obviously not. Since it is impossible for both disjuncts to be true simultaneously, there can never be a counterexample generated from such cases. Remember that to be a counterexample, both disjuncts must be imagined to be true and the entire disjunction thereby made false.

Other examples cited as uses of an exclusive *or* can also be shown to be inclusive by considering out-of-the-way states of affairs (from [17]).

(6) Either you eat your dinner or I'll spank you!

"Clearly", so it's said, "this *or* must be exclusive. Just imagine the consequences of the child's eating his dinner and also getting spanked!" Whatever the rhetorical force of such a claim, it is patently invalid. In the first place, just as when coffee or tea is offered, it is not *required* that both be given; it is enough for the offerer (or threatener) to fulfill only one disjunct—that is his total obligation (or consequence). In fact, people being rather greedy (or lazy, or whatever, depending on the particular sentence involved), they normally *will* satisfy only one disjunct. It is in this way that the child builds up his expectation that when sentences like (6) are uttered, he will not be spanked if he eats his dinner. But the sentence itself is no guarantee—merely his past experience is. In the second place, in order for *or* in (6) to be exclusive, there can be *no* state of affairs imaginable when both disjuncts are true and still we are willing to admit that the entire sentence is true. If I say (6) to my son, he eats his dinner, and then throws the dishes on the floor, I can perfectly well spank him without fear of contradicting my earlier warning (6). One is tempted to try to establish some "connection" between the disjuncts of (6) in order to rule out such states-of-affairs as I have just produced showing (6) to be inclusive. In attempting to do so, it is well to remember that instances of the law of excluded middle will not prove the point. The following are two ways of understanding (6).

(7a) Either you eat your dinner or I'll spank you if you don't!

(7b) Either you eat your dinner or I'll spank you for not eating it!

But these too are not examples of an exclusive *or*. If the *if* in (7a) is logic's material implication, then satisfying the first disjunct satisfies the other. And if some other *if* is understood (say a counterfactual analyzed along the lines of Lewis, 1974), it is straightforwardly inclusive; for when my son eats his dinner, in those possible worlds belonging to the class of closest possible worlds in which he doesn't eat his dinner, in those worlds I spank him. And (7b), unfortunately for our hypothetical objector, cannot have both disjuncts be true; for if my son eats his dinner (making the first be true) then the second cannot be, and conversely. So there is no guarantee that it employs an "exclusive" *or*, any more than instances of the "law of excluded middle" do.

Some further sentences which have been claimed to exhibit an exclusive sense of *or* are these (from 4, 9, 16, Lakoff 1971)

(8) Give me liberty or give me death!

(9) Arlene wants a marguerita or a grasshopper.

(10) Coffee or tea comes with the meal.

(11) Either John eats meat or Harry eats fish.

Examples and argument along the lines offered for (2)—(7) could be adduced to show that (8)—(11) also do not exhibit a use of the exclusive *or*. But instead I shall give a more general argument. First, I will assume that a sentence is true if and only if its negation is false—a part of our pre-theoretic intuitive understanding of negation and falsity, I should think. (But if there are any would-be intuitionists, we shall restrict our attention only to "finite" cases wherein even they will admit that the principle holds: vide Heyting, 1966). We again consult our intuitions and find that *either ... or* negates as *neither ... nor*, so the following are the negations of sentences (8)—(10) (ignoring (11))

(12) I demand neither liberty nor death.

(13) Arlene wants neither a marguerita nor a grasshopper.

(14) Neither coffee nor tea comes with the meal.

It is obvious under which circumstances (12)—(14) are true; namely in the same circumstances as the following are true[3]

(12a) I do not demand liberty and I do not demand death.

(13a) Arlene does not want a marguerita and Arlene does not want a grasshopper.

(14a) Coffee does not come with the meal and tea does not come with the meal.

Now, in order for a negation to be false exactly when the affirmation is true, and in order for (12)—(14) to be the negations of (8)—(10), and for (12)—(14) to be false exactly under the circumstances in which (12a)—(14a) are false, it follows that (8)—(10) are false *only* when (12a)—(14a) are true. In other words (8)—(10) are false when and *only* when both disjuncts are false; i.e., the *or* in (8)—(10) is inclusive. If the *or* were exclusive, then (8)—(10) would also be false when both disjuncts were true; from which it would follow that (12)—(14) would be true in the following cases (since we must still account for our intuition that (12)—(14) are the negations of (8)—(10), no matter what we decide about *or*):

(12b) I demand liberty and I demand death.

(13b) Arlene wants a marguerita and Arlene wants a grasshopper.

(14b) Coffee comes with the meal and tea comes with the meal.

But clearly, these circumstances *falsify* (12)—(14); they certainly don't verify them. Hence the *or* of (8)—(10) cannot be exclusive. Indeed, if they were exclusive, the negations of such sentences would not be formed by *neither ... nor* but rather as

[3] The examples depend on how *neg* distributes over conjunctions; in particular, it depends on the validity of DeMorgan's Laws. If we restrict ourselves to *and* and leave out of consideration conjunctions like *but* and *unless*, and if we concern ourselves only with the conditions under which a compound statement of these forms is true or false, the assumed distribution of *neg* seems to always work.

(12c) I demand liberty if and only if I demand death.

(13c) Arlene wants a marguertita just in case she wants a grasshopper.

(14c) Coffee comes with the meal exactly when tea does.

And it is just plain obvious that (12c)—(14c) are not the negations of (8)—(10).

How many *or*'s are there in English? Nothing I have said has proved that there is only one, the inclusive *or*; all I've said is that examples of the so-called exclusive *or* usually given are not clearly proper examples. If the logicians are correct and there really are two *or*'s, this fact should be represented in the formal lexicon of a linguistic description of English, or else (if *or* is transformationally introduced) introduced by different transformations. At least it is clear that an adequate semantic account would have to in some way distinguish them. On the other hand, it may be that there actually exists only one *or*, but that the other "use" of *or* is in some way derived from the primary meaning by (say) a deletion transformation which results in a syntactic ambiguity. For example one could hold that there was basically only the exclusive *or* (whether lexical or transformationally introduced); the "uses" of sentences wherein there *seems* to be an inclusive *or* are a kind of ellipsis. The P-marker underlying

(15) I'll be with Arlene tonight or I'll be with Suzi tonight or I'll be with both Arlene and Suzi tonight

would become, by an ellipsis or deletion transformation, the P-marker underlying

(16) I'll be with Arlene or Suzi tonight

in which the *sentence* as a whole would be understood "inclusively". However, it is to be understood that there aren't "really" two *or*'s; rather, we first generate (15), from which we derive (16) by ellipsis or deletion. The resultant sentences make it look as if there are two *or*'s, but this illusion is due to the ellipsis.[4]

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[4] Sentences (15) and (17) are given here already "reduced", even though this would be by a later transformation. The transformation under discussion would operate on the unreduced PM's.

T(OR):	S_1		*or*	S_2	*or*	$[S_3]_s$	and	$S_4]_s$
SD:	1		2	3	4	5	→	
SC:	1	and	+2	3	null	null		

The conditions on T(OR) are somewhat difficult to state. Clearly we want $S_1 - S_3$ and $S_2 - S_4$, but we also want the reference of everything *in* S_1 to be the same as the corresponding thing in S_3 (and also for S_2 and S_4). So we want, in addition to identity of structure, also co-referentiality of all corresponding parts. The *and*+*2* in the SC is of course *and*/*or*, which later becomes *or*.

Alternatively, it could be that the basic *or* is inclusive, and that the exclusive *or* "uses" are derived by ellipsis or deletion. The P-marker underlying

(17) Arlene wants a marguerita or Arlene wants a grasshopper but Arlene doesn't want both a marguerita and a grasshopper

would become the one underlying

(18) Arlene wants a marguerita or Arlene wants a grasshopper

where the entire sentence is understood "exclusively". Once again, there aren't "really" two *or*'s; rather, there is a deletion transformation which generates a string that could have been generated differently and which has distinct meanings depending on its transformational history. It merely *appears* as if there are two *or*'s.

Which of these three alternatives should we choose? One reason not to opt for the "two different *or*'s" approach is that there is some easily-stated relationship between inclusive and exclusive "uses" of *or*. Our linguistic theory should capture it directly. Either of the other alternatives allows the relationship to be stated in the grammar, while avoiding homographs. This is perhaps not a conclusive reason, as there is also an easily-stated relationship between any two binary truth-functions; nonetheless, the relationship which would hold between the two *or*'s (if there be two) is certainly very close. And the fact that (in English) they are homophones and homographs should reinforce that intuition.

It seems to me that a certain kind of "simplicity" argument will make the third alternative (the inclusive *or* is basic) be attractive. One reason for looking at all the purported examples of an exclusive *or* was to show that there are really many fewer than one expects at first blush. If we take exclusive *or* as basic, then most sentences using *or* will have to go through the transformation that converts (15) into (16). But if we take the inclusive *or* as basic, there will be few sentences that will have to go through the transformation which converts (17) into (18). So taking inclusive *or* as basic makes derivations of *or* sentences simpler.[5]

There are, of course, two more options. (a) Following [22], Fowler (1971), Nicholson (1957), Lakoff (1971), OED, UED, WNI2, WNI3, we might say that

[5] I am aware that this is not the kind of simplicity argument normally given, wherein one captures "linguistically significant generalizations" by collapsing rules or introducing handy notational devices allowing more straightforward statement of the rules. That kind of simplicity argument was what I just used to rule out the "two different *or*'s" option. The present "simplicity metric" is perhaps best viewed as a method of accounting for surface strings: given two otherwise comparable grammars, choose the one which allows for the shortest statement of the transformational history of the class of sentences. Since there are more "inclusive *or*" sentences, we choose this present option. It might furthermore be the case that there is a performance reflex here also. Speakers tend to make most use of what is psychologically easiest to process. Since "inclusive *or*" is more common, one might expect that it is psychologically easier; and this account would capture that feature in a natural way.

there aren't even any "uses" of *or* except exclusive. (b) We might say that there aren't even any "uses" of *or* except inclusive. Either alternative here will eliminate the need to include an "*or* deletion" transformation in the grammar, since the output of the one selected (by one's choice of (a) or (b)) is empty. Proposal (a) is obviously incorrect, for (19) and (20) are not redundant and must be interpreted as using an inclusive *or*.[6]

(19) A citizen of the U.S. who is not a naturalized citizen is a person born in the U.S. or a person born of U.S. citizens.

(20) You may choose either proposal (a) or proposal (b), but not both.

I would like for a moment to push proposal (b), but not on the Gricean grounds that the apparent "exclusiveness" of some *or* sentences is to be accounted for on other grounds (viz. a theory of conversational implicature). Rather I want to claim that, except as a statement about their future expactations on what will actually happen, no one really thinks that any *or* sentence is used "exclusively" (in the sense defined: if both disjuncts were true, the disjunction would be false).

One is tempted to think of

(21) You may have salami or pastrami, or both

as "an exclusive use of *or*", on the grounds that putting in the last disjunct makes sense only if it was somehow ruled out earlier. But that is clearly not true, since if the last disjunct is satisfied so are both of the others and hence the first *or* is inclusive. What this implies is that the last disjunct is redundant; and if one attends to the intonation contour normally used in uttering (21), he will see that the last disjunct is rather like an emphatic afterthought—calling attention to the willingness to give both salami and pastrami. In this it is different from (10) in which the restaurant considers their obligation completely satisfied when they have given only one of coffee or tea (and are unwilling, normally, to give both).

The incorrect conclusion to draw from sentences having the form of (21) is that of Hurford, 1974. By considering such sentences as

(22) Ivan is an American or a Russian

(23) That painting is of a man or a woman

(24) *John is an American or a Californian

(25) *That painting is of a man or a bachelor

the followings "generalization" is extracted

(G) The joining of two sentences by *or* is unacceptable if one sentence entails the other; otherwise the use of *or* is acceptable.

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[6] Jack McIntosh also points to spice bottles which say on the back "1 oz. or 28.375 gms."

Since *you may have both* would entail *you may have salami or pastrami* if this *or* were inclusive, it would then follow that the first occurrence of *or* in (21) was incorrect and that (21) was ungrammatical. Since it isn't, the first *or* of (21) must be exclusive.

There is something wrong with principle (G). Let us first note that sentences (24) and (25) are *peculiar*, but that is not good grounds for calling them ungrammatical. For example, their "unacceptability" could be accounted for by some general Gricean conversational principle such as "Don't be redundant except when necessary" or (more conservatively) by the psychological truism that people tend to repeat, point out special cases, etc., only when called upon to do so or when they don't realize they're doing it. If (G) were correct, the beginning set theory student who said

(26) Either Zorn's Lemma or the Axiom of Choice will allow me to prove exercize 12.

would be uttering an ungrammatical sentence. And no one would have known whether

(27) I believe in the Continuum Hypothesis or the Axiom of Choice

was grammatical until Cohen proved them independent in 1963. Furthermore, due to the associativity of *or*, (21) could be paraphrased (awkardly, a feature I shall attempt to alleviate somewhat by supplying some additional sense-preserving words) as

(28) You may have salami, or else pastrami or even both

Note now that principle (G) calls this meaningless because the second *or* is improper: *You can have both* entails *You can have pastrami*. Hence (28) is meaningless, and yet it means the same as (21). Furthermore, principle (G) will prevent any sentence of the form "It's either A, B, C, D, ... or all of the above" from being meaningful, since the last disjunct entails each of the others. Hence (G) is not well-founded as a grammatical principle. It is perhaps best seen (along the Gricean or psychological grounds mentioned above) as a statement about what sorts of sentences people are likely to use.

Perhaps the most recalcitrant examples for my claim of "always inclusive" are those involving choice.

(29) Mommy, can I have some cake and cookies?
You may have cake *or* cookies, make a choice.

But before we decide, on the basis of such examples, that there are some "exclusive uses" of *or*, several things should be noted. First: Even if this were an "inclusive use" of *or*, the child might not be justified in assuming that his mother will be amenable to giving him both. As we have seen above, such assumptions are determined by past experience, and that experience might be such as not to justify it. Second: Even if this were an "inclusive use" of *or*, and even if the child were justified

in assuming he could get both, Mommy is not required to give both. Her obligation in uttering (29) is fulfilled by giving only one. Third: even if we must take sincere utterances of (29) in such circumstances as embodying an "exclusive use" of *or*, it is by no means obvious then that Mommy's answer isn't just sloppy talk—that it isn't just an infelicitious way of saying what she intends. What she wants to say is

(30) You may have either cake or cookies, but not both.

Surely a grammar needn't be responsible to speakers' infelicities. Fourth[7]: consider what happens if the cake and the cookies were, unbeknownst to Mommy of course, poisoned. Then (31) would be true

(31) If you have either cake or cookies, you will get sick.

It would follow, then, as a matter of logic, that if the child follows the permission granted by (29) he will get sick. That is, the truth conditions of the *or* of (29) together with (31) guarantee the truth of *the child will get sick*. But notice that if the child took, say, cake, the argument is not immediately valid. What is needed in addition is the rule of "addition" ("*or*-introduction", stated "*p*; therefore *p or q*") as an intermediate step in order to use modus ponens. But "addition" requires that *or* be understood inclusively. Hence the truth conditions of the *or* in (29) must be inclusive. And fifth: it is not obvious that there aren't also circumstances under which both disjuncts could be true and yet the entire disjunction also true. Consider the child who takes a piece of cake in accordance with (29). Then suppose he does all his homework in record time. Is Mommy barred from giving him a cookie reward? She would be (under pain of contradiction) if the *or* in (29) were exclusive. But that's ridiculous or I'm entirely wrong.

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[7] This argument is due to Jack McIntosh.

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