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SEMANTIC NONSPECIFICITY AND MIXED QUANTIFIERS

Jack tells Jill, 'I love you too'. He could mean any one of several things, (a) that just as Jill loves him, so he loves her, (b) that he loves Jill and someone else too, (c) that like someone else, he too loves Jill, or (d) that he has love as well as some other feeling for Jill. Whatever he may mean, he would be speaking literally and yet, I claim, the meaning of the sentence he is using, though univocal, does not fully determine what he means in using it. The point is not merely that what he means is a matter of his communicative intention,¹ but that the sentence is semantically nonspecific. It does not have a definite truth condition, even with Jack and Jill fixed as the values of 'I' and 'you'. A condition necessary for its truth is that Jack love Jill, but one of four other conditions is necessary as well, depending on which of the (a)–(d) is meant. However, the sentence is not thereby ambiguous, but merely semantically nonspecific.

I believe there to be many forms of sentence whose semantic representation (or whatever you want to call that which gives its meaning) does not possess, even modulo indexicality, a definite logical form or even a determinate truth condition.² A case in point (I'll mention another one later) is mixed quantification, recently discussed in these pages by Kempson and Cormack,³ who propose a "radical vagueness analysis". I will argue that while their approach is a great advance over wanton appeal to ambiguity, it is not radical enough. Kempson and Cormack regard each of their target sentences as having a single semantic representation, hence as unambiguous, and yet construe the various understandings⁴ of utterances of the sentence as semantic interpretations generated by different applications of certain 'procedures' to the semantic representation. The unitary semantic representation they propose is, they concede, embarrassingly but unavoidably weak. I claim it to be intolerably weak. I argue too that Kempson and Cormack have provided insufficient reason for regarding the so-called interpretations of their sentences as semantic. Their analysis is surely superior to the other four they consider, but all five suffer from the same mistaken presupposition, that a semantic representation must specify a proposition, something with a definite truth condition. Once that presupposition is cleared away, we can regard the target sentences as truly unambiguous, though semantically nonspecific, and derive the various understandings

pragmatically. Then we have a radical vagueness analysis fully deserving of the name.

1. KEMPSON AND CORMACK'S PROPOSAL

There are various ways of using sentences with mixed quantifiers. In using (1), for example,

- (1) Every linguistics student has read a book by Chomsky.

a speaker could mean that there is some one book by Chomsky that all linguistics students have read, or merely that every student has read some book or other by Chomsky, not necessarily the same one. In this case the first understanding entails the second, so there is no reason, as Kempson and Cormack point out (267), to regard the sentence as ambiguous. Its meaning can be identified with the weaker understanding; in a suitable context a speaker can implicate the stronger. However, matters get more complex in the case of numerical rather than standard quantifiers, as is illustrated by (2).

- (2) Two examiners marked six papers.

This sentence can be used variously to mean (a) that two examiners each marked the same six papers, (b) that two examiners marked six (not necessarily the same) papers each, (c) that two examiners marked a total of six papers, with one marking some and the other marking the rest, (d) that two examiners marked a total of six papers, possibly without either having marked any one paper in full, or, I think rather implausibly, (e) that six papers were each marked by two examiners, possibly with different papers marked by different examiners.

The conventional view is that a sentence like (1) is ambiguous in two ways and one like (2) ambiguous in four or five ways. Kempson and Cormack challenge this view and opt instead for a vagueness analysis, according to which each sentence has but a single semantic representation from which "the particular interpretations are derived by applying general rules" (259–260). And because there is no one interpretation that is entailed by all the others, no logically weakest interpretation, the posited "weakly specified semantic representation which is common to each of the possible distinct interpretations" (269) is weaker than *any* of the interpretations. Different combinations of the procedures of 'generalizing' (turning an existential quantifier into a universal) and 'uniformizing' (when an existential quantifier follows a universal,

reversing their order) generate the various interpretations. The weakly specified semantic representation of (2) is (3).

- (3) There are at least two examiners and at least six papers, and at least one of the former marked at least one of the latter.

Kempson and Cormack's formalization of (3) and of the several understandings of (2) makes clear how applying these procedures to (3) generates these understandings (except for (d), which they treat separately (305) by inventing a 'contribute to' sense of verbs like 'mark'). Unlike other analyses, Kempson and Cormack admit that on theirs "the distinction between different numbers would be all but eradicated, not emerging fully until after the procedure of generalisation had applied" (278), but because this procedure belongs to semantics and the generated interpretations are semantic, the semantic distinction between different numbers is captured after all.

How does Kempson and Cormack's radical vagueness analysis differ from its chief rival, the "maximal ambiguity analysis"⁵, on which a sentence like (2) has as many logical forms as it has interpretations? If the interpretations that Kempson and Cormack's procedures generate from (3) are semantic, why not construe theirs as a maximal ambiguity analysis, on which the ambiguity shows up at the level of semantic interpretation instead of at the level of logical form? It seems that Kempson and Cormack's refusal to call theirs an ambiguity analysis is but a terminological choice, and a rather misleading one at that. For they assign a single 'semantic representation' to a sentence like (2), with which they associate the sentence's logical form, but then regard their procedures as generating 'interpretations' which they claim to be semantic as well. At the outset they announce that

... we shall be claiming that a distinction has to be made within linguistic theory between a definition of logical ambiguity, where a single sentence-string expresses distinct propositions, and a definition of linguistic ambiguity, where a single sentence-string corresponds to distinct sentences. (260)

It emerges later that the principal reason for denying that mixed quantifier sentences are, on Kempson and Cormack's analysis, *linguistically* ambiguous (they are admittedly *logically* ambiguous) is that the ambiguity

... does not arise from syntax-semantics mapping rules. Both lexical ambiguity and syntactic ambiguity give rise to arbitrary, unrelated pairs. Only in the case of the semantic transformations do we get systematic, or non-arbitrary, logical ambiguity. (301)

However, if these transformations are indeed semantic, then why shouldn't they be taken as generating readings, albeit ones that are derived from the same semantic source, the so-called semantic representation? As Tennant remarks,

... the mangling of meanings by the procedures makes nonsense of the claim to have found a logical form, or semantic representation "common to each of the possible distinct interpretations". (318)

Perhaps Tennant is exaggerating. It seems to me that Kempson and Cormack's requirement that distinct senses be "arbitrary, unrelated pairs" is itself arbitrary. There is a straightforward way in which different readings of cases of syntactic ambiguity are related. That the different readings of 'Painting poets can be amusing' or of 'Audubon preferred little bird watchers' derive from different deep structures (on a standard transformational grammar), though making the sentences ambiguous, hardly shows the different readings to be unrelated. Even lexical ambiguity doesn't always have the feature of arbitrary, unrelated readings, as with words like 'high', 'square', and 'tree'.

2. RADICAL NONSPECIFICITY

We have seen that Kempson and Cormack's description of their analysis as an alternative to the maximal ambiguity analysis is misleading to say the least. For they regard the mixed quantifier sentences as logically if not linguistically ambiguous, and they call the various interpretations 'semantic'. In Section 4 their argument for the latter claim will be examined, but here we should examine the presupposition that underlies not only their view but its rivals. Kempson and Cormack (302) explicitly assume that the semantic representation of any indicative sentence has a definite logical form which determines a unique proposition, at least up to indexicality.⁶ In the case of mixed quantifier sentences there is no logically weakest interpretation (i.e. one entailed by each of the others), and so the semantic representation, being unitary, must specify a proposition weaker than *all* the interpretations if it is to specify a proposition at all. This is the 'weakly specified semantic representation' from which the various interpretations are derived by applying generalization and uniformization. But, I ask, why assume that a semantic representation must possess a (classical) logical form determining a unique proposition?

It is instructive to look at Tennant's proposal, which he describes as "strikingly parallel" (318) to Kempson and Cormack's despite regarding the target sentences as (semantically) "ambiguous quantified sentences" (316). Each of the readings (his term) is determined by a distinct language game, which Tennant neatly describes within the framework of game-theoretic semantics. Using branching quantifiers Tennant schematizes the mixed numerical quantifier sentences with (4).

$$(4) \quad \begin{array}{l} mx(Ax) \\ ny(By) \end{array} Rxy$$

This form does not specify just how the *A*'s and the *B*'s are related, and only the application of a particular set of game rules determines a specific reading, e.g. that each of *mA*'s bears *R* to some set or other of *nB*'s, or that there is a total of *mA*'s that bear *R* to a total of *nB*'s. Each semantic game that Tennant describes (there are others too) determines a specific proposition, which one depending on the order in which the quantifiers are applied and whether they are understood distributively or collectively. However, a logical form fitting the pattern of (4) does not determine a unique proposition, even one that is weaker than any of the readings of the sentence in question. Now Tennant, though describing instances of (4) as logical forms, offers no explanation why such sentences should be regarded as ambiguous, i.e., why applying a particular set of game rules should yield a reading of a sentence rather than merely a contextually inferred understanding of its utterance. For lack of a reason to describe Tennant's games as semantic, let us regard them as merely pragmatic.⁷ Then we can take (4) as schematizing *the* form of mixed numerical quantifier sentences, and regard each such sentence as unambiguous but semantically vague or nonspecific. This form is logically weaker than each of its understandings not in the sense of being entailed by each of them (it cannot be, since this form does not specify a proposition) but in the sense of not completely specifying any one of them at all.

This way of looking at mixed quantifier sentences is the same as that suggested at the outset for a sentence like 'I love you too'. Another illustration of semantic nonspecificity is the philosophically important case of belief sentences, which are commonly though in my view mistakenly thought to be ambiguous. Take (5), for example.

$$(5) \quad \text{Van believes that the most famous American linguist admires the greatest living American philosopher.}$$

Each of the definite descriptions in (5) can be used in several ways,⁸ depending on whether the speaker is using them to express his way or

Van's way of thinking about the objects of Van's belief. The two descriptions need not be used in the same way, and each may be used in both ways at once, say if the speaker agrees with Van about who the most famous American linguist and the greatest living American philosopher are. (There is even the possibility, perhaps farfetched, that 'the greatest living American philosopher' is being used to express how Van supposes the man he regards as the most famous American linguist thinks of the object of the latter's admiration.) So if (5) is ambiguous, it is ambiguous in more ways than I'd care to count (imagine a sentence with three or more descriptions in the belief clause). The better course is to regard it as semantically nonspecific. Each of its many understandings has its own truth condition, but the sentence itself has none.⁹ And notice that as with mixed numerical quantifier sentences, there is no weakest understanding, none entailed by each of the others.

To regard sentences like (1), (2), and (5) as semantically nonspecific is to recognize the possibility that the semantic representation or logical form (if we allow nonclassical logical forms) of a sentence does not completely specify a proposition. This is uncontroversially true of sentences containing indexicals, so it should not be summarily ruled out in cases like the above. A pragmatic account of the different understandings of such sentences, say along the lines of the theory of Harnish and mine (*op. cit.*), would show how the nonspecific semantic representation of such a sentence combines with contextual information to generate, in accordance with the speaker's communicative intention, a determinate propositional content of a particular utterance of the sentence. Then an utterance of the nonspecific (2), 'Two examiners marked six papers', could be understood to mean, depending on what intention could reasonably be ascribed to the speaker, that (a) two examiners each marked the same six papers, (b) two examiners marked six different (or at least not necessarily the same) papers, (c) two examiners marked six papers together, with one marking some and the other the rest, (d) two examiners marked six papers together, possibly without either having marked any one paper in full, or (e) six papers were each marked by two examiners (possibly with different ones marked by different examiners). Of course, if the speaker thinks the available contextual information insufficient for the hearer to identify his intention, he could make his intention explicit by uttering a sentence more specific than (2), such as one of (a) through (e) above.¹⁰

Once we reject the assumption that the semantic representation of a sentence must specify a definite proposition, we need not resort to Kempson and Cormack's split-level semantics of mixed numerical

quantifier sentences. We can give these sentences a truly radical vagueness (nonspecificity) analysis, and abandon the notion that their many understandings are at all semantic. Before replying to Kempson and Cormack's argument that these understandings are semantic, however, I wish to show that their approach, with its weakly specified but nevertheless propositional semantic representation, does not work for certain nonstandard quantifiers (not that they claim it does), hence that a more comprehensive approach to mixed quantifiers is needed in any case.

3. MIXING NONSTANDARD QUANTIFIERS

What happens to the semantics of mixed quantifier sentences when we replace numerical quantifiers with ones like 'few' and 'many'? There turns out to be no logical form comparable to the semantic representation posited by Kempson and Cormack for the numerical quantifier cases. That their analysis is inapplicable to other nonstandard quantifier cases provides further support for a nonspecificity analysis.

The general form of the sentences considered by Kempson and Cormack is (6), and the 'weakly specified semantic representation' of such sentences is schematized by Tennant as (7).

(6) $mA's R nB's$

(7) There are at least $mA's$ and at least $nB's$ and at least one of the former $R's$ at least one of the latter.

Such a semantic representation, though weaker than any of the interpretations of a sentence with the form of (6), nevertheless specifies a definite proposition. But consider a sentence like (8), having the form (9).

(8) Few examiners marked many papers.

(9) Few $A's R$ many $B's$.

Could an extension of Kempson and Cormack's approach handle all of the following interpretations of (8)? (a) There were few examiners, and they marked the same set of many papers. (b) There were few examiners, and they each marked a set (not necessarily the same) of many papers. (c) There were few examiners, and collectively they marked a set of many papers (though possibly none marked many papers individually). (d) There were few examiners, and collectively they marked a set of many papers (though possibly none marked *any* paper individually). (e) Of all the examiners, few individually marked

many papers. (f) There were many papers, but of all the examiners, few individually marked those papers. (g) There were many papers all of which were marked, but of all the examiners few marked *any* of the papers. . . .

Is there some proposition entailed by all these interpretations and from which they can all be derived by various applications of the procedures of uniformization and generalization? If there is, presumably it would take a form comparable to (7); at least I can't think of a plausible alternative. Then for (8) we would have (10).

- (10) There were few examiners and many papers, and at least one of the former marked at least one of the latter.

You need not have read the valuable paper on nonstandard quantifiers by Barwise and Cooper¹¹ to realize that (10) won't work. It is not entailed by interpretations (d)–(g). Aside from the (d) interpretation, whose counterpart was a problem for Kempson and Cormack's analysis of (2), the problem is that quantifier expressions like 'few examiners' and 'many papers' can each be taken in two ways. 'Few examiners' can be understood as 'few of (all) the examiners' or as 'all examiners, of which there are few', and 'many papers' as 'many of the papers' or as 'all papers, of which there are many'.¹² To complicate matters, 'few' and 'many' are vague, not just by being fuzzy but by being relative. For example, the number of papers could well exceed the number of examiners even if many examiners collectively marked few papers. Moreover, the two kinds of individuals need not be distinct. American Motors makes few cars but thousands more than Henry Ford owns, even though he owns many cars. Now one might object that all these complications only go to show that 'few' and 'many', or at least the quantifier phrases containing them, are ambiguous, but this claim must be argued for. The simpler approach is to reckon them as vague, as radical vagueness analysts like Kempson and Cormack would presumably do.¹³

In calling sentences like (8) semantically nonspecific, I mean not merely that the quantifiers they contain are vague and relative (unlike numerical quantifiers) but that their relative scopes and distributive/collective construals are not grammatically indicated. Lacking terms like 'each', 'individually', 'collectively', 'together', or some qualifying phrase, in contrast to the various sentences giving understandings (a) through (g) specifically, an unqualified sentence like (8), or (2) for that matter, contains insufficient grammatical information to determine a proposition completely. Its lexical content and syntactic structure simply fail to

determine a semantic representation that specifies a definite proposition. There should be nothing puzzling about this fact. Just as a portrait does not represent all the features of its subject and a map does not represent all the features of a terrain, so a sentence does not represent all the features of a thought it might be used to express. In certain cases a complete sentence does not express a complete thought.

4. THE ARGUMENT FROM NEGATION

To show that the various interpretations of their target sentences are semantic rather than merely pragmatic, Kempson and Cormack rely on the following pattern of argument.

The choice that we have in considering negation is whether negation, being within semantics, operates before any of the procedures; or whether it is the procedures that must precede the operation of negation. If the procedures must apply before negation, then as long as we retain the logical priority of semantics over pragmatics it is clear that they too will have to be semantic. (285)

Their talk of the order of operation of negation and of the procedures suggests that negation and the procedures operate over the same domain. However, whereas the procedures map semantic representations into interpretations, negation does not. Depending on the level at which we are operating, negation can map sentences into sentences, propositions into propositions, and, I suppose, semantic representations into semantic representations. But into interpretations? Coming out of a screening of 'The Invasion of the Body Snatchers', I might say, 'That was the best movie I ever saw', and mean that it was the worst. Is the operation of negation at work and if so, on what?

Despite the obscurity here, let us proceed with Kempson and Cormack's argument from negation at least to see how it works. To illustrate what is obviously not a semantic case, they consider an utterance of 'I'm tired' and one of its negation. In uttering 'I'm tired' one might pragmatically imply 'I want to go to bed', and surely no one in his right mind would suggest that this is part of a strengthened semantic interpretation of 'I'm tired'. Moreover, a person who utters 'I'm not tired' might pragmatically imply 'I do not want to go to bed'. Here the strengthening (not that there is anything comparable here to Kempson and Cormack's procedures) follows the negation. If it preceded the negation, then the total force of the utterance would be 'Either I'm not tired or I don't want

to go to bed'. But this is not the force, so the implication is pragmatic. In seemingly stark contrast is the case of (11) and its negation (12).

- (11) Justin ate three carrots.
 (12) Justin didn't eat three carrots.

In using (11) one might imply that Justin did not eat at least four carrots. So the strengthened interpretation of (11) is (13).

- (13) Justin ate three carrots & – (Justin ate at least four carrots).

To argue that this 'exactly' interpretation of (11) is semantic, Kempson and Cormack consider an utterance of (12), the negation of (11). Presumably the speaker would not mean that Justin did not eat at least three carrots and that Justin did eat at least four carrots, for that would be inconsistent. Yet that is what the speaker would mean if, as in the previous case, negation preceded strengthening. Kempson and Cormack think, therefore, that negation follows strengthening in this case, and they represent what the speaker would mean in uttering (12) as (14).

- (14) – (Justin ate three carrots) v Justin ate at least four carrots.

But this is wrong. Perhaps what the speaker would mean, if he didn't mean that Justin ate fewer than three carrots, would be simply that Justin ate at least four carrots, not the disjunction of (14). Now Kempson and Cormack would reply that (14) represents the 'exactly' interpretation of (12). The point of using (14) is that it is derived from (11) not by negation followed by strengthening but the other way round. First (11) is strengthened, giving (13), and then the result is negated, to yield (14) as desired. Unfortunately, Kempson and Cormack fail to motivate their apparent assumption, to me quite arbitrary, that (14) is or should be derived from (11) at all. They offer no explanation of the theoretical status of this so-called derivation. With a sufficiently rich variety of *ad hoc* 'procedures', any sentence could be 'derived' from any other, and in more than one way. We could derive (14) from (11) by negating (11) and then inserting 'exactly', which we then delete to get the surface form (12) with interpretation (14). But such a theoretically unmotivated derivation would prove nothing.

Perhaps we should take up another of Kempson and Cormack's examples. This one involves the word 'cat', which they claim to have two readings, one covering the entire feline species, the other confined to its adult members. We are to consider utterances of (15) and of its negation (16).

- (15) Jo bought a cat.
 (16) Jo didn't buy a cat.

Supposedly, the strengthened interpretation of (15) is (17),

- (17) Jo bought a cat & – (Jo bought a kitten).

but that can't be right. Strengthened, (15) would be used to mean that Jo bought a cat and that *it* was not a kitten. So understood, it would not be falsified by the fact that in addition to buying an adult cat Jo also bought a kitten. Ignoring this difficulty, consider an utterance of the negative sentence (16). Now if negation were applied to (15) and the result strengthened, we would not have the restricted interpretation we want of (16). Instead, we would have the contradictory '– (Jo bought a cat) & Jo bought a kitten'. To get what we (Kempson and Cormack) want, we must reverse the order of application. That yields the desired (18), the negation of (17).

- (18) – (Jo bought a cat) v Jo bought a kitten.

But of course what a speaker might mean in uttering (16) is simply that Jo bought a kitten. This interpretation is not produced by either order of applying negation and strengthening.

So far I have shown that the negative sentences (12) and (16) admit of other restricted interpretations than those that Kempson and Cormack derive from the positive sentences (11) and (15) by applying strengthening and negation in that order. They argue that because negation is semantic, strengthening must be semantic too, whereas in the case of 'I'm not tired' strengthening follows negation and is therefore pragmatic, as when the sentence is used to mean 'I don't want to go to bed' too. However, as remarked earlier, Kempson and Cormack fail to provide any motivation for the whole business of deriving restricted uses of negative sentences from unrestricted positive sentences. Moreover, if the interpretations derived in their way are not the only available ones and the other interpretations must be derived pragmatically, then the burden of proof is on Kempson and Cormack to show that their interpretations cannot be derived pragmatically as well. From a pragmatic point of view there is no difference in kind between using (16), 'Jo didn't buy a cat', to mean (18) and using it to mean any one of the following: 'Jo bought a kitten', 'Jo bought an Angora', 'Jo bought a lion cub', 'Jo bought a dog', 'Jo stole a cat', and 'Jo didn't buy anything'. It would be ludicrous to posit for each of these uses a distinct ('strengthened') semantic interpretation of (16). So Kempson and Cormack owe us an explanation of why (18) deserves special treatment.¹⁴

Kempson and Cormack's argument from negation does not begin to show that the various understandings of (utterances of) semantically nonspecific sentences should be deemed semantic. Instead of commenting on their treatment of negations of mixed numerical quantifier sentences, I will conclude with an observation on how Kempson and Cormack's underlying assumption about semantic representations undermines the point of calling certain sentences semantically nonspecific. The whole point, they and I agree, of introducing nonspecificity is to avoid proliferating ambiguity. A semantically oriented Ockham would have said, 'Don't multiply senses beyond necessity'. However, despite denying that mixed numerical quantifier sentences are linguistically ambiguous, Kempson and Cormack insist on calling them logically ambiguous. It is not their argument from negation that leads them to this conclusion; that argument is meant only to meet the natural objection that the various understandings of the target sentences are merely pragmatic. What drives them to their view that these understandings must be regarded as semantic interpretations is the fact that the semantic representation they propose is prohibitively weak. None of the understandings is entailed by each of the others and their "weakly specified semantic representation which is common to each of the possible distinct interpretations" is too weak to be an understanding itself. Worse, if it told the full semantic story, "the distinction between different numbers would be all but eradicated". So it was natural for Kempson and Cormack to supplement that story by introducing procedures to generate the interpretations, all under the heading of semantics. What they should have done instead was to abandon the assumption that the semantic representation of a sentence must specify a definite proposition. Then they could have recognized that mixed non-standard quantifier sentences, and many others, are semantically nonspecific in the fullest sense, having semantic representations which do not completely specify propositions. These sentences simply do not have determinate truth conditions.¹⁵

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NOTES

¹ Since any sentence may be used nonliterally, that it is being used literally is a matter of communicative intention. See Kent Bach and Robert M. Harnish, *Linguistic Communication and Speech Acts* (MIT Press, Cambridge, Mass., 1979), p. 10.

² These are distinct notions, logical form being the stronger. For example, instances of 'p' and 'p & (q ∨ q̄)' have the same truth condition but not the same logical form.

³ Ruth M. Kempson and Annabel Cormack, 'Ambiguity and Quantification', *Linguistics and Philosophy* 4 (1981), 259–309. All page references are to this article except, on occasion, to the reply in the same issue by Neil Tennant, 'Formal Games and Form for Games', 311–320.

⁴ I follow the practice of using 'understanding' neutrally, either for semantic interpretations or for pragmatic implications, to avoid prejudicing the discussion.

⁵ Kempson and Cormack briefly discuss three other approaches, a restricted ambiguity analysis and two other vagueness analyses, but rightly regard them as highly implausible.

⁶ Tennant (314) explains how sentences containing indexicals can be assigned logical forms despite not expressing propositions.

⁷ Kempson and Cormack do say that "the level of proposition is not the only level required in a semantic theory of natural language" (300), but they must mean merely that the propositions corresponding to the interpretations of a sentence are distinct from the weaker semantic representation, which they nowhere deny to be a proposition as well. Sometimes, e.g. on 260 and 298, they seem to use 'proposition' interchangeably with 'semantic interpretation'.

⁸ Since I deny that they make sentences like (5) syntactically or semantically ambiguous, I hesitate to describe them as having referentially transparent or opaque *occurrences*.

⁹ It would be pointless to regard the sentence as having a disjunctive truth condition, with one disjunct per understanding, for the logical form of the sentence, though construable as determining such a truth condition, is hardly disjunctive. Kempson and Cormack (281) mention such an analysis of mixed numerical quantifier sentences and rightly dismiss it out of hand.

¹⁰ Our attention on (2) should not keep us from noticing that the plausibility of different understandings may depend on the content of the sentence in question. For example, the (a) understanding of 'Two lions ate six lambs' would be precluded by the fact that a given lamb can be eaten only once. Similarly, some understandings of 'Two boys lifted six men' are relatively less plausible than the corresponding understandings of 'Two men lifted six boys'.

¹¹ Jon Barwise and Robin Cooper, 'Generalized Quantifiers and Natural Language', in the same issue of *Linguistics and Philosophy* 4 (1981), 159–219, as Kempson and Cormack's article.

¹² Numerical quantifier expressions also can be taken in either of these two ways, e.g. 'six papers' as either 'six of the papers' or 'six papers altogether'.

¹³ It should be noted that my argument does not depend on the particular quantifiers that occur in (8). It works just as well for 'several', 'most', and 'a few'. It works also for mixtures of these and numerical quantifiers, as in 'Three examiners marked several papers'. Whereas an extension of Kempson and Cormack's approach does not work for these cases, on the nonspecificity account the diverse possible understandings of a given sentence can be explained pragmatically.

¹⁴ That the particular interpretation in question is inconsistent with the external negation of the sentence does not show that (18) deserves special treatment. Besides, 'Jo bought a kitten' is not the only such interpretation. Another is 'Jo bought an Angora', and surely there is not a special sense of 'cat' that excludes Angoras.

Also, what Kempson and Cormack describe as the negation-before-strengthening use of 'I'm not tired' to mean 'I'm not tired and I don't want to go to bed' is better described as a conversational implicature generated by the mutual contextual belief (see Bach and Harnish, *op. cit.*, p. 5f.) that one wants to go to bed if and only if one is tired.

¹⁵ Many thanks to Jay Atlas for suggesting a number of points of clarification.