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*Pronouns, Quantifiers, and Relative Clauses (II): Appendix**

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It is occasionally tempting, after climbing a mountain, to use the elevation one has gained to dash up to the top of a connected peak which does not have sufficient interest to induce one to climb so high for its sake alone. It is in this spirit that I turn to Geach's Latin Prose theory of relative clauses. The matter itself is of no very great moment, and some new ground will have to be covered in dealing with Geach's arguments. Nevertheless we shall primarily be applying the theory constructed in the body of the paper, and when one is in a position to expose bad arguments relatively rapidly, it is perhaps a good idea not to leave them unchallenged, especially when they appear to be gaining currency.[1]

The issue concerns the relative clauses which are appended to quantifiers. In the sentence 'Any man who owns a donkey beats it', it is natural to take the relative clause 'who owns a donkey' as going together with 'man' to form the logical unit 'man who owns a donkey' which is a (complex) general term appropriately substitutable for the

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* This article is an appendix to "Pronouns, Quantifiers, and Relative Clauses (1)," *Canadian Journal of Philosophy* **VII**, 3 (September, 1977). Many references given here are given in full only in that article.

1 See especially W. V. Quine, "Reply to Geach", in Davidson and Hintikka (eds.) *Words and Objections* (Reidel, Dordrecht, 1969), pp. 331-32 and *The Roots of Reference*, pp. 90-91.

schematic letter A in the schema: 'Any A is B'. On the intuitive view, the expressions for which the letters A and B schematically stand in 'Any A is B', 'Most A's are B's', 'Just one A is B', etc., are general terms — simple (like 'man') or complex (like 'man who owns a donkey') — but in either case terms which have an extension, and whose extension is relevant to the truth or falsity of the resulting quantified sentences.

On the treatment of quantified sentences constructed in the body of this paper, expressions of the form 'man who owns a donkey' are definitely regarded as genuine logical units. If we look at that treatment model-theoretically, quantifiers are regarded as functions from *pairs* of sets (of degree 1) to truth values, and it is the role of the complex general term appended to the quantifier to identify the first of the two sets. This can be brought out more clearly by adopting a more perspicuous notation than that of ordinary English, which we have been trying to mirror as best as we can. Quantified sentences would appear as follows:

$$Qx\ (\ Ax;\ Bx\ )$$

where 'Q*x*' is schematic for quantifiers 'any', 'many', 'most', 'a', 'just one'; etc., 'A*x*' for any general term, simple like 'man' or complex like 'man who owns a donkey', and 'B*x*' similarly. The 'most'-quantifier, for example, is associated with that function from pairs of sets to truth values which yields truth iff more members of the first set are members of the second than are not. 'Just one' is associated with that function from pairs of sets to truth values which yields truth iff the intersection of the sets has exactly one member. The quantifier 'The' is associated with that function from pairs of sets to truth values that yields truth iff the first set has exactly one member and it is also a member of the second. And so on.

On the binary analysis which we have adopted, expressions of the form 'man who owns a donkey' are therefore regarded as unquestionable semantic units whose semantic properties, crucially their extension, are relevant to the truth value of the quantified sentences in which they occur. Nor is such a binary treatment at all eccentric, or the exclusive property of those who have my unsound views of pronouns. For it has recently been widely recognized that the way of reducing the superficial binary structures of 'Some A's are B's and 'All A's are B's' to the unary structures which are familiar from the classical predicate calculus cannot be generalized to all quantifiers.

For 'some' and 'all', and, if we wanted it undefined, 'no', we may form a single general term with the aid of a connective from the two general terms which appear in the surface structure. In the case of 'some' the connective is 'and', the general term is 'being both A and B', and the function from sets to truth values associated with the

quantifier yields truth iff the set is non-empty. In the case of 'all', the connective is 'if', the general term is 'being B if A' and the function from sets to truth values associated with the quantifier yields truth iff the set is identical with the universal set.

However, it appears that the quantifiers of ordinary language for which this reduction can be effected, or can be effected with relative ease, are the exception rather than the rule. A tremendous re-working of the surface form of the sentence has to be undertaken if the quantifiers in 'Exactly two A's are B's', 'The A is B', etc., are to be given unary structures. And, as I believe N. Rescher was the first to point out,[2] in the case of the plurality quantifiers 'Many A's are B's', 'Few A's are B's', 'Most A's are B's', 'Almost all A's are B's', etc., a unary structure does not appear to be workable at all. Since Rescher's observation, Wallace[3], Altham and Tennant[4], Lewis[5], Dummett[6], and Geach himself[7] have suggested binary analyses of ordinary language quantifiers.

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2 N. Rescher, 'Plurality-quantification', *Journal of Symbolic Logic* **27** (1962) p. 374.

3 J. Wallace, *Philosophical Grammar*, Ph.D. dissertation, Stanford University, 1964 (University Microfilms: Ann Arbor, 1971), esp. pp. 136-54.

4 J.E.J. Altham and N.W. Tennant, *op. cit.* In saying that they propose a binary analysis, I am cutting through their confusing terminology, and regarding their 'sortalizer' as the first constituent in a binary structure. The contrast they have in mind between 'sortal' (or 'restricted') quantifiers on the one hand and binary quantifiers on the other is never adequately explained, and in my view is better dispensed with. This will help to clear up one contradiction in their paper; for on p. 52 'Many P's are Q's' is said to be *irreducibly sortal* while on pp. 50 and 56 sortal quantifiers are said to be replaceable everywhere by non-sortal quantifiers. The point is that 'Many P's are Q's' is irreducibly *binary*, and it is not threatened by the replacement of Altham and Tennant's 'sortal' quantifiers by other n-ary ($n > 1$) quantifiers.

5 D.K. Lewis, 'Adverbs of Quantification', in E. Keenan *op. cit.* pp.3-15.

6 M. Dummett, *Frege*, p. 162. It is not so much a suggestion Dummett makes on his own account as one he offers to one who is impressed by Russell's theory of descriptions.

7 'Back Reference', pp. 204-5. Geach offers a binary treatment of 'Just one' quantifier and also, with acknowledgement to Prior, to the 'the' quantifier. Presumably to maintain consistency with his views on relative clauses, the binary structure Geach assigns to the sentence 'The only bachelor who was at the party was F' is 'The only bachelor x (x was at the party; x was F)', rather than 'The x (x was a bachelor at the party; x was F). But there is no getting around the fact that the property which is required to be uniquely exemplified for the truth of the sentence is 'being a bachelor at the party'. In view of this, 'bachelor' "goes with" 'was at the party' in a way in which it plainly does not go with 'was F ', and it

Given that there appear to be some quantified sentences of ordinary language which *have* to be assigned a binary structure, considerations of simplicity combine with the desire for homophony of which I spoke earlier (p.488, "Pronouns, Quantifiers, and Relative Clauses(1)") to encourage us to assign binary structures even to those sentences which can, with a certain amount of distortion and uncovering of 'hidden connectives', be regarded as involving a single complex general term. This is certainly the reasoning I would use to defend the theory which I constructed in the body of the paper.

However, in the present context, it is not necessary to try to construct a defense of the *superiority* of the binary treatment. Once again, Geach's aggressiveness gives us an easy target, for he claims that a treatment along the lines I have sketched is not even viable. He writes:

> ... the complex term 'A that is P' is a sort of logical mirage. The structure of a proposition in which such a complex term occurs can be clearly seen only when we have replaced the grammatically relative pronoun by a connective followed by a pronoun [i.e. transform the apparently binary structure into a unary structure with the aid of a connective]; when this is done, the apparent unity of the phrase disappears...[8]

For, as Geach says earlier:

> Whereas ... 'gentleman *who* is so grossly insulted' looks like a logical unit, the string of words... 'gentleman, *if he is so grossly insulted*' has no such look at all.[9]

Elsewhere Geach writes:

> ...the apparent unity of a complex term 'D that is P' is delusive; ...such a phrase has no more logical unity than, say, 'Plato was tall' has in the context 'The philosopher whose most eminent pupil was Plato was tall'.[10]

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seems pointless not to have a notation which registers this fact. See e.g. B.H. Partee, 'Some Transformational Extensions of Montague Grammar', in Partee (ed.), *Montague Grammar* (Academic Press, 1976), p. 55: 'Only by making the major syntactic division between "*the*" and "*boy who lives in the park*" can a uniform semantic treatment of *the* be given'.

8 *Reference and Generality*, p. 118.

9 *Reference and Generality*, p. 115.

10 'On Complex Terms', *Logic Matters*, p. 104.

These are strong words. It is not merely that Geach prefers an analysis of quantified sentences upon which the unity of the phrase 'D that is P' disappears. Geach's view is that any treatment of quantified sentences as containing the logical unit 'D that is P' must be *doomed* — just as any treatment which attempts to discern the constituent sentence 'Plato was tall' in the sentence 'The philosopher whose most eminent pupil was Plato was tall' is doomed.

So, it is sufficient to refute Geach's view simply to construct a viable semantic theory which does treat phrases of the form 'D that is P' as logical units. And by this I mean, somewhat more precisely, a deductive theory which derives truth conditions for quantified sentences by making essential use of a lemma in which a semantical property is assigned to the constituent 'D that is P'; most plausibly an extension (model theoretically) or satisfaction conditions (truth theoretically).

Geach seems not to be aware of the strength of his claim and of the appropriate ways to defend it. He replied on one occasion to an extremely pertinent criticism of his views:

> If someone wishes to construct a formalized language that will refute my view of complex terms, it will not be sufficient for the language to contain structures analogous to ordinary-language complex terms, nor even for the language to lack the *ML* sort of eliminative definitions; he must also ensure that no such procedures of elimination can consistently be added to the language as rules of inference. Nobody has come near to meeting this condition.[11]

This is absurd. It is not a sufficient defense of the view that the apparent unity of the expression e in the sentence S(e) is a logical mirage simply to show that S(e) is equivalent, or even provably equivalent, to some sentence S' which does not contain any unitary expression corresponding to e. We do not show that the apparent unity of the expression '-p' in the sentence '-(-p v -q)' is a logical mirage by pointing to the equivalence of the whole sentence to the sentence 'p & q' which contains no constituent corresponding to '-p'. It was not enough for Russell to defend his view that the description 'the ϕ' is not a genuine constituent of the sentence 'The ϕ is F' that he be able to show that the sentence containing the description is equivalent to some sentence in which there is no constituent corresponding to it. He had to show that no semantic theory which treated 'the ϕ' as a genuine constituent could be constructed — to show, that is to say, not only that there is an equivalence between description-containing and non-description-containing sentences,

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11 'Complex Terms Again', *Logic Matters*, pp. 107-8.

but in addition that the equivalence would have to be *used* in the construction of a systematic theory of meaning for description-containing sentences, since no viable theory could operate upon the unreformed structure.

If we maintain a proper grip upon the polemical situation induced by Geach's claim that the apparent unity of phrases of the form 'D that is P' is a logical mirage, we can see that his position has already been refuted. We have already shown how to construct a viable semantic theory in which such expressions are treated as logical units (following, it must be admitted, other philosophers, including Geach himself). So we could leave matters there, secure in the knowledge that there must be something wrong with Geach's arguments. But a certain amount of instruction and even amusement can be derived from showing exactly what is wrong with them.

As far as I can discover, there are four arguments which Geach has advanced for his position, each associated with one of the following four sentences:

(I) Any man who owns a donkey beats it.
(II) The one woman whom every true Englishman honours above all other women is his mother.
(III) A boy who was only fooling her kissed a girl who really loved him.
(IV) Only a woman who has lost all sense of shame will get drunk.

Insuperable difficulties are supposed to arise when a theory which treats 'D that is P' phrases as logical units is applied to each of these types of sentence. I shall discuss the arguments associated with these examples in turn.

I. The argument connected with the first example is succinctly stated by Quine as follows:

> On this view, which Geach calls the *Latin prose theory* of relative pronouns, it is wrong to treat 'that found him', or 'man that found him' as a term or as a self-contained grammatical entity at all. For, to switch to a medieval example that he adduces, take 'man that owns a donkey' — as if to say 'donkey-owner'. The sentences
>
> Any man that owns a donkey beats it
> Some man that owns a donkey does not beat it
>
> would reduce to nonsense:
>
> Any donkey-owner beats it,
> Some donkey-owner does not beat it

On his analysis, which renders 'that' as 'if he' or 'and he' and includes changes in word order, the sentences remain coherent:

Any man, *if he* owns a donkey, beats it
Some man owns a donkey *and he* does not beat it[12].

It certainly is good to know that Geach's analyses of the sentences are coherent. But if one is to extract from this an *argument* against the theory which Geach opposes, it must rest upon the following principle:

> If the syntactically complex string e in the sentence S(e) is a genuine logical unit with the role of a general term, then the sentence S(e′) which results from replacing e by another, possibly unstructured, but synonymous general term e′, is also well formed.

Perhaps this is an acceptable criterion for some concept of a *self-contained grammatical entity*, but, despite Quine's desire to agree with Geach, this is not the concept Geach is concerned with. As a criterion for an expression's occurring as a genuine logical unit, I see absolutely no reason to accept it. It is tantamount to the denial of the very possibility of E-type pronouns.

Consider the sentence:

> John owns a donkey and Mary beats it.

I have tried to show that we should see this sentence as a conjunction of two propositions each with its own truth value, despite the fact that the second clause contains a referential device ('it') whose reference is fixed by a description derived, according to a rule, from the first clause. We have two independent propositions expressed by two grammatically inter-dependent clauses. Given the grammatical dependence of the clause 'Mary beats it' upon the first clause, it is not surprising that well-formedness is not always preserved when we substitute an equivalent clause of a different grammatical structure, as in:

> *John is a donkey-owner and Mary beats it.

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12 *Roots of Reference*, p. 90. See *Reference and Generality*, p. 117. The longer argument in *Reference and Generality* contains a counter-argument against a way of trying to get out of this 'difficulty'. Since I shall argue the 'difficulty' is quite spurious we do not have to go into these ramifications.

Given all that has gone before, we are hardly going to be induced to accept this fact as a proof that we do not have, in the original sentence, a conjunction of two propositions, in which the sentence 'John owns a donkey', and the general term 'owns a donkey', occur as genuine semantical constituents. By the same token, we are not going to accept the mere fact that one cannot substitute 'donkey-owner' for 'man who owns a donkey' in (I) as a proof that the latter expression does not there occur as a genuine semantical constituent. (I) has exactly the same form as a sentence which we analyzed in detail on p.524 of "Pronouns, Quantifiers, and Relative Clauses (1)", namely:

Most men who own a car wash it on Sundays

in which analysis 'man who owns a car' was treated as a genuine constituent.

Apart from resting upon a dubious criterion of an expression's occurring as a genuine semantic constituent, Geach's argument is defective in another way, which can be brought out if we pretend to accept it. Geach is opposing the view that (I) contains the constituent 'man who owns a donkey' as it would on the analysis into the binary structure:

Any (x) [x is a man who owns a donkey; x beats it].

Instead, he offers the structure:

Any man (x) (if x owns a donkey then x beats it).

Now, although Geach's parsing reveals no constituent of the form 'man who owns a donkey', it does appear to contain the complex predicate 'owns a donkey'. So, by the criterion we have just adopted, we ought to be able to replace this complex general term with the equivalent 'is a donkey-owner' *salva congruitate;* but we cannot:

*If any man is a donkey-owner he beats it.

It would appear that Geach is hoist with his own petard.

What this shows is that even if we adopt the criterion, the considerations of permissible substitutions upon which it rests do not really bear upon the nexus of common noun and relative clause at all. The criterion rules out the recognition of a constituent 'man who owns a donkey' in (I) only because it rules out recognition of the sub-constituent 'owns a donkey' (with a narrow scope existential quantifier). A narrow scope existential quantifier forces an E-type interpretation upon the pronoun in the second clause, which the

criterion effectively rules out. Since it would appear that Geach's analysis also purports to contain the constituent 'owns a donkey' his parsing is no more in harmony with the criterion than that which it was designed to replace.

To this it will be replied that Geach need not regard 'a donkey' in his analysis as the trace of an *existential* quantifier, but rather of the wide-scope *universal* quantifier 'any donkey', which is then able to bind the pronoun in the apodasis. So more fully, his analysis of the sentence would be:

Any donkey (*y*) Any man (*x*) (if *x* owns *y* then *x* beats *y*).

Now it is true that there is no longer any constituent corresponding to the complex predicate 'owns a donkey' which might be replaced by 'is a donkey-owner'. But this only serves to show how irrelevant to the relation between common noun and relative clause these considerations are. For it is equally open to those who wish to see the common noun plus following relative clause form a coherent unit to avail themselves of a wide-scope universal quantifier 'any donkey'. Their analysis of (I) would then look like this:

Any (*y*) [Donkey *y* ;
Any (*x*)[x *is a man who owns y; x* beats *y*]]

or:

Any donkey is such that any *man who owns it* beats it,

which becomes, after the quantifier 'A donkey' has been inserted in the argument place being generalized:

Any man who owns a (any) donkey beats it.

In the italicized constituents we have the kind of unit which Geach deems to be a mirage.

It is true that Geach appears to think that a genuine semantical constituent cannot be bound into from the outside, but that view is the stuff of which the next argument is made.

II. Geach writes:

> Consider the pair of sentences:
>
> (19) The one woman whom every true Englishman honours above all other women is his mother.

(20) The one woman whom every true Englishman honours above all other women is his Queen

In (20) it is tempting to construe the string 'woman whom every true Englishman honours above all other women' as a general term A; but we surely cannot do this in (19), or else (19) would imply that the one and only A is the mother of each true Englishman. The noun phrase theory cannot resolve the difficulty.[13]

For a reason I will explain below, Geach's second example is in fact unsound for making his point, so I shall change it to:

(IIa) The one woman whom every true Englishman honours above all other women lives in Buckingham Palace.

(Since I have not introduced resources for dealing with adjectives in attributive position, I shall suppress 'true' in 'true Englishman'.) Let us first construct these two sentences in the grammar we have outlined.

Sentence (II)

( ) honours ( ) above all other women (Rule) 1; sentence frame$_2$

woman: ( ) honours (who) above all other women
4; predicate expression$_1$

( ) is ( )'s mother 1; sentence frame$_2$

woman: ( ) honours (who) above all other women;
( ) is ( )'s mother 5; binary sentence frame$_3$

(The$_1$ [woman: ( ) honours (who) above all other women]) is ( )'s mother 6; quantified sentence frame$_2$

(The$_1$ [woman: $\overline{(\text{ }) \text{ honours (who) above all other women}}$]) is ( )'s mother 7; quantified sentence frame$_1$

Englishman; (The$_1$ [woman: $\overline{(\text{ }) \text{ honours (who) above all other women}}$] is ( )'s mother
5; binary sentence frame$_1$

13 "Quine's Syntactical Insights", *Logic Matters*, p. 122. See also 'On Complex Terms', pp. 102-5.

(The$_1$ [woman: (every$_2$[Englishman]) honours (who)
above all other women] is ( )'s mother
6; quantified sentence frame$_0$

'The woman whom every Englishman honours above all other women is his mother'.

Sentence (IIa)

( ) honours ( ) above all other women 1; sentence frame$_2$

Englishman; ( ) honours ( ) above all other women
5; binary sentence frame$_2$

(every$_1$ [Englishman]) honours ( ) above all other women
6; quantified sentence frame$_1$

woman: (every$_1$ [Englishman]) honours (who) above all other women
4; predicate expression$_0$

( ) lives in Buckingham Palace 1; sentence frame$_1$

woman: (every$_1$[Englishman]) honours (who)
above all other women; ( ) lives in Buckingham Palace
5; binary sentence frame$_1$

(The$_2$[woman:(every$_1$[Englishman]) honours (who)
above all other women]) lives in Buckingham Palace
6; quantified sentence frame$_0$

'The woman whom every Englishman honours above all other women lives in Buckingham Palace'.

I confess that I do not see the difficulty. As the process of construction makes clear, the sentence which is supposed to present irresolvable difficulties for the noun phrase theory, (II), certainly contains a genuine logical unit formed from the common noun 'woman' together with its relative clause, but this relative clause contains an empty singular term position which is subsequently quantified upon by the wide scope universal quantifier 'every Englishman'. The underlying logical structure is masked by the convention, in English, of marking the singular term position being

quantified upon by actually inserting the quantifier into it; the structure is better brought out in the paraphrase:

> Concerning every Englishman, the *woman he honours above all others* is his mother

and even more clearly in the notation:

> Every (x) [Englishman x; The (y) [*Woman y & Honours above all etc. x,y*; Mother y, x]]

and, in both, the italicized phrases constitute a unitary structure corresponding to the nexus of common noun plus relative clause.

Consequently, to argue upon the basis of sentences like (II) that a common noun plus its relative clause does not form a genuine logical unit seems to require the absurd assumption that a genuine logical unit cannot be quantified into. It is no better an argument than one which proceeds to the conclusion that the antecedent of a conditional does not constitute a genuine logical unit from consideration of such a sentence as

> If a (certain) colleague of mine comes we are done for

when this is interpreted as having the structure

> There is a colleague of mine such that if *he comes* we are done for.

But upon neither of the semantic theories of quantified sentences which we have considered is it necessary to become perplexed by the semantic role of constituents like 'he comes' in my example, or 'woman he honours above all others' in Geach's. (One could almost say that it is precisely at this point that one can manifest the understanding which a genuine semantic theory for the quantifiers produces.)

On the Fregean semantics, a constituent with an unbound, or free, pronoun is assigned no semantic interpretation at all; for a Fregean, all antecedents of conditionals are closed sentences, and all (possibly complex) general terms restricting quantifiers are closed general terms. But, of course, Geach can take no comfort from this fact. For the Fregean need only consider this case; by the time the role of the conditional, or the innermost quantifier, is to be evaluated, the sentence will have metamorphosed itself so as to exemplify it. We will be considering the truth value of some potential sentence of the form 'If β comes we are done for' or 'The woman whom β honours above

all other women is β's mother'. Just as we observed that the Fregean could content himself with an account of the role of the conditional as it stands between constituents with a truth value, so he can content himself with an account of the role of the constituent formed from common noun and relative clause as that of introducing a complete general term which restricts the range of the quantifier.

If the semantic theory is constructed along Tarskian lines, one can recognize the constituent containing an unbound pronoun directly. The constituent which restricts the innermost quantifier 'woman he honours above all other women' is not a closed general term, satisfied or not satisfied by an object absolutely, but an open general term, satisfied or not satisfied by an object only relative to certain assignments to the pronoun 'he'. Since, upon a Tarskian theory, the semantic value of all expressions is computed relative to such assignments, the treatment of a quantifier restricted by an open general term is exactly the same as one restricted by a closed general term.

It may be thought that it is unnecessary to go over such elementary matters, for Geach writes as though all that he is concerned to emphasize is that 'woman whom *every* Englishman honours above all others' (with the quantifier in place) does not form a genuine constituent, just as the closed sentence 'a colleague of mine comes' does not occur as a genuine constituent in my example. Geach does say:

> It may already have occurred to some readers that the puzzle about (II) could be resolved by considering the different scope of 'every Englishman', in (II) and (IIa). In (IIa) the scope is only the clause 'whom every Englishman honours above all other women'; in (II) it is the whole proposition (that is to say, the whole proposition is one to the effect that every Englishman...) But this explanation does not conflict with mine; for if you say that the scope of 'every Englishman' is not confined to the clause 'whom every Englishman honours above all other women', then you are in effect saying that upon logical analysis the unity of the phrase 'woman whom every Englishman honours above all other women' breaks up.[14]

This is either quite disingenuous, or an appalling muddle. For although it is true that interpreting the quantifier 'every Englishman' as having wide scope does involve splitting up the phrase 'woman whom every Englishman honours above all others', *it is a split quite different from that which Geach is supposed to be demonstrating.* This is shown by the fact that even after the wide scope quantifier is taken out, we

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14 "On Complex Terms", *Logic Matters*, p. 105. I have changed the numbering and the constituents to make them appropriate to the examples we are considering.

are left with a constituent ('woman whom he honours above all other women') whose unity Geach is committed to denying. The splitting-up which is involved in removing the quantifier from the singular term position upon which it quantifies is not aided by, and does not involve, breaking up the relative pronoun into a connective and a pronoun.

In conclusion, I had better explain why I did not make use of Geach's example: 'The one woman whom every true Englishman honours above all other women is his Queen'. In fact, this sentence has exactly the same structure as the other sentence in Geach's pair, (II), with a wide scope 'every Englishman' quantifier, and a narrow scope 'the one woman' quantifier. It entails that there is one (and only one) woman whom every true Englishman honours above all other women, not in virtue of its structure, but in virtue of the particular semantical properties of the word 'Queen': we know that every Englishman shares one and only one Queen. If we try to give wide scope to 'the one woman' and narrow scope to 'every Englishman', along the lines of:

> There is one and only one woman who has this property: (she is honoured by every true Englishman above all other women) and this woman ....

then the 'his' in 'his Queen' will be unbound. (There is no hope of an E-type interpretation of this pronoun.) Geach conceals this from his readers, if not himself, by adopting the incorrect reading:

> There is one and only one woman who has this property: (she is honoured by every true Englishman above all other women and she is his Queen).[15]

By incorrectly incorporating the 'she is his Queen' constituent into the general term being said to be uniquely exemplified, Geach provides a way in which the 'his' in 'his Queen' can be bound, but only at the expense of attributing to the sentence a reading it does not have. I am sure Geach will acknowledge that sentences of the form 'The ϕ is F' with 'the ϕ' having wide scope are not generally paraphrasable as 'Just one thing is *both* ϕ *and* F'.

Although I felt this mistake worth pointing out, it is not essential to Geach's intended reasoning, which may be adequately refuted on other grounds. That is why I switched examples.

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15 'On the other hand, (20), is "G(one woman)", where G is proxy for: Every true Englishman honours — above all other women, and — is his Queen.' 'Quine's Syntactical Insights', *Logic Matters*, p. 124.

III. As Geach himself observes, the difference between restrictive and non-restrictive relative clauses is very well marked in English and 'certainly does correspond to a logical difference'[16]. The sentences:

> All Americans, who are lovers of money, are disturbed by this development
> All Americans who are lovers of money are disturbed by this development

clearly differ in their import. And it would appear to be quite correct to say that in the case where the relative clause is non-restrictive, 'Americans, who are lovers of money' does not form a coherent logical unit. But it does not serve Geach's purposes to show that *some* expressions of the form common noun + relative clause do not form coherent logical units. This would have been granted by absolutely everyone without the need for any elaborate arguments. Geach's concern is with the relative clauses on the other side of this well marked division; though, of course, if he was right in his view of those clauses, the division would have to be re-interpreted.

Consequently, it is to no avail for Geach to produce compelling reasons for not regarding the nexus common noun + relative clause as a genuine semantical unit in sentences of a type which we have independent reasons for thinking may involve non-restrictive relative clauses. (III) is such a sentence, and when we considered a sentence exactly like it, we were able to 'insert commas', yielding:

> A boy, who was only fooling her, kissed a girl who really loved him.[17]

For, as Geach says, inserting commas around the relative clause in sentences of the form 'An F who is ϕ is G' makes no difference to the import of the proposition.[18] This reply would not be available if Bach-Peters sentences could easily be constructed involving quantifiers whose relative clauses could not be interpreted as non-restrictive (e.g. 'all', 'every', 'most') but we gave reasons for thinking that they could not be. We saw that any sentences involving these quantifiers which had crossing pronoun-antecedent relations would have to involve genuine pronouns of laziness as in:

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16 *Reference and Generality*, p. 113.

17 See p. 528, "Pronouns, Quantifiers, and Relative Clauses (1)."

18 *Reference and Generality*, p. 114.

> The only *boy who plucked up courage to ask him* got his father to agree

and once the 'him' is replaced by the material for which it is going proxy, there is no difficulty whatever in interpreting the resulting expression 'boy who plucked up courage to ask his father' as a genuine logical unit, a general term appropriately replaceable for 'A' in the schema 'The A is F'.

IV. Discussing our sentence (IV) Geach says:

> A person who asserts (IV) is by no means implying that a man, as opposed to a woman will not get drunk; so we cannot regard (IV) as obtainable by reading "B" in "Only a B will get drunk" as the complex term "Woman who has lost all sense of shame". Plainly the right way to construe (IV) is this:
>
> > A(ny) woman will get drunk only if she has lost all sense of shame
>
> The "Only...who..." of (IV) can be replaced by a connective and a pronoun, "only if she"; and the apparent unity of the complex term has vanished.[19]

Geach's observation about (IV) is intended to refute an analysis of it along the lines of:

> Only (x) [woman who has lost all sense of shame x; will get drunk x]

where 'only' is associated with that function from pairs of sets a, b such that $f(a,b)$ = True iff $b \subseteq a$. He proposes to replace it with:

> Any woman (x) [will get drunk x only if has lost all sense of shame x]

Now, the first thing to notice about (IV) is that it is ambiguous; it has the reading Geach suggests and also the reading he rejects. It is quite proper to report the state of affairs in which the only people who ever get drunk are women who have lost all sense of shame by saying 'Only women who have lost all sense of shame will get drunk' or (IV). Geach chooses to use an example in which such an interpretation is unlikely, but nevertheless it exists. By itself this does not matter much; Geach could gain some comfort from the existence of an English sentence

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19 'Complex Terms Again', *Logic Matters*, p. 107; see also *Reference and Generality*, p. 118-19 and 'Back Reference', p. 202.

which at least has one reading which involves, upon analysis, the break-up of the common noun + relative clause nexus. However, the observation is suggestive. For it suggests that the relevant set which is identified for purposes of contrast is not syntactically determined by the shape of the sentence but is pragmatically determined, with some assistance from the intonation contour with which the sentence is uttered. If this is so, we should expect to find interpretations of 'only' sentences in which the identification of the relevant set requires breaking into expressions which even Geach regards as genuine logical units. This is exactly what we find. Consider the sentence:

> Only boys who lose their mothers before adolescence have a troubled adult life.

Not only can one utter this sentence without intending to imply that no girls have a troubled adult life, but one may also not intend to imply that the only boys who have a troubled adult life are boys who lose their mothers before adolescence. Context, and perhaps contrastive stress on 'before', can make it clear that one's intention is to assert that, of boys who lose their mothers, only those who lose them before adolescence have a troubled adult life. The break Geach advocates into 'boys' and 'has lost his mother before adolescence' will not get the right result. This should no doubt dampen Geach's enthusiasm to use the interpretation of 'only'-sentences as a test of what is a genuine logical unit, and what is not.

A similar point can be made with the help of attributive adjectives. As Geach himself has been concerned to emphasize,[20] some expressions of the form adjective + common noun ('a good king') are not analyzable conjunctively ('is a king and is good'). Attributive adjectives are predicate modifiers, which take a predicate to make a new predicate, and cannot sensibly stand on their own. One would have thought that there is no doubt that the expression 'good king' forms a coherent logical unit in the sentence

> Any good king is loved by his subjects.

But now consider the sentences:

> Only a good king is remembered after his death.
> Only a large woman will get drunk.

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20 See P.T. Geach, 'Good and Evil', *Analysis* **17** (1956), p. 33.

Both of these appear to have the reading which Geach supposes is troublesome for the 'noun phrase theory'; i.e. on which they do not entail that no one other than a king will be remembered after his death, and that no one other than a woman will get drunk, respectively. Once again it would appear that 'only' sentences require us to break into genuine logical units to interpret them.[21]

This concludes my examination of Geach's arguments which are supposed to demonstrate that the unity of the common noun + relative clause is a logical mirage. As the viability of the theory we had constructed which treated these expressions as logical units led us to expect, not one of these arguments produces any genuine difficulty for such a theory. So, for all Geach has said, the noun-phrase theory is as viable as the Latin Prose theory. I want to end by giving some arguments for regarding the Latin Prose theory as inferior if not unworkable.

On the theory we have advanced, a uniform role is adopted for the relative pronouns; they are devices for marking the position in a sentence which are being abstracted upon in forming a complex predicate. This theory deals not only with relative pronouns appended to all quantifiers in a uniform way, but also with the occurrences of relative pronouns in other contexts. For, of course, complex predicates occur in other contexts, and it is not surprising that we find relative pronouns there doing the same job. So, just as we have

He is young for an executive

we have

He is young for a man who has climbed Everest;

just as we have

He wanted to be king

we have

He wanted to be a man who has read everything;

and just as we have

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21 For a discussion of a related sentence, 'Only moderate students left', see E.L. Keenan, 'Quantifier Structures in English' *op. cit.*

He became a man

we have

He became a man who did not know his own name.

Finally, just as any simple general term may be used to pin down a demonstrative reference, as in 'That cat is mine', so a complex general term may be used for the same purpose, as in 'That cat which has a white patch on its back is mine'.

In addition, we may hold out the prospect of eventually providing a uniform account of relative and interrogative pronouns. It is a familiar enough point that WH-questions can be regarded as having the form of the interrogative quantification:

For which x: A(x)?

where the variable marks the place in a complex predicate which the audience is requested to fill in. It is obvious how a predicate abstraction device should be usable in this way.

As far as I can see, Geach's suggestion that relative pronouns always split up into a connective plus a pronoun offers no such prospect. Nor can I see a suitable Geachian rendering of the relative pronouns in the non-quantificational contexts. Certainly someone satisfies 'a man who has climbed Everest' iff he satisfies 'man' and satisfies 'has climbed Everest', and this might suggest that some analysis involving conjunction (as the connective) can be worked up. But a conjunctive rendering is the one analysis which really does not serve Geach's larger purpose, for it can hardly be used to show that the original expression does not form a coherent logical unit.

Even if we restrict attention exclusively to quantificational contexts, Geach's analysis must be deemed inferior. First, it must count for something that no uniform account of the pronouns is offered; that 'we must divine from the context which connective is packed in with the portmanteau word "that" '.[22] The awkwardness which this non-uniform treatment introduces has been noticed by the grammarian McCawley. Considering the two sentences:

(72) At least some Americans want Nixon to invade New Zealand
(73) Some, if not all, Americans want Nixon to invade New Zealand

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22 *Reference and Generality*, p. 116.

he says:

> If *some* combines semantically with the conjoined sentence '*x* is an American and *x* wants Nixon to invade New Zealand', *at least* in (72) should refer to a scale on which the different things that that sentence can be combined with appear, and (73) implies that *all* is on that scale; but *all* does not combine with '*x* is an American and *x* wants Nixon to invade New Zealand'...[23]

More important is the fact that Geach does not appear to be able even to offer an account of all the relative clauses that go along with quantifiers. As I reported earlier, no analysis of quantifiers like 'almost all', 'most', 'many', 'few' etc., is known which joins the two constituents apparent in surface structure with a connective to form a single general term upon which the quantifier can operate. Geach has acknowledged the difficulty in the following words:

> The one sort of case I know where the noun phrase theory seems to have the advantage over the Latin prose theory comes in a rather outlying field of logic: *pleonotetic* logic, as it might be called — the logic of majorities ... Consider:
>
> (35) Almost every man who drives a car dislikes the police
>
> The noun phrase theory gives the correct truth conditions for this: (35) is true just in case 'Almost every motorist dislikes the police' is true. But clearly neither of the following is equivalent to (35)
>
> (36) Almost every man, *if he* drives a car, dislikes the police
> (37) Almost every man drives a car *and he* dislikes the police
>
> It would take me too far into pleonotetic logic to deal with this objection; I think it can be dealt with...[24]

What, then, is the situation? On the one hand, we have a theory which is capable of dealing in a uniform way with the occurrence of relative clauses not only in all quantified sentences, but also in other contexts. By staying close to the forms quantified sentences actually take in English, the theory offers the prospect of homophonic truth conditions. And on the other? We have a theory which limps in almost every way. Far from being able to deal with relative clauses in other contexts, it cannot even deal with relative clauses in all quantified sentences. Where it works, it works by introducing departures, different in different cases, and more or less extensive, from the

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23 J.D. McCawley, 'A Program for Logic', in Davidson and Harman *op. cit.*, p. 530.

24 *Logic Matters*, p. 125.

surface forms of the sentences which it treats.[25] And, finally, not one of the arguments which are supposed to induce us to overthrow the former theory and swallow the latter stands up to scrutiny.

March 1977

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25 Geach should not be encouraged in his discovery of, for example, a hidden 'if...then' in the sentence 'Any man who owns a donkey beats it' by the natural English paraphrase 'Any man, if he owns a donkey, beats it'. For after all, we have 'Most men, if they are married, are happy' where the 'if' is not a trace of the logician's conditional. See D.K. Lewis, 'Adverbs of Quantification', p. 11: 'I conclude that the *if* of our restrictive if-clauses should not be regarded as a sentential connective...It serves merely to mark an argument-place in a polyadic construction'.