USE OF THESES

This copy is supplied for purposes of private study and research only. Passages from the thesis may not be copied or closely paraphrased without the written consent of the author.
RELATIVE IDENTITY

by

NICHOLAS GRIFFIN

This thesis was submitted in partial fulfilment of the requirements for the degree of Doctor of Philosophy in the Australian National University.

December, 1974.
This thesis is my own composition.
To the best of my knowledge all sources have been acknowledged.

Nicholas Griffin

Nicholas Griffin
ACKNOWLEDGEMENTS

My major debt of gratitude is to Richard Routley who gave help far beyond the call of supervision. He read through and commented with meticulous care on various initial drafts and the entire final draft. His criticisms have affected not merely the details but the entire structure and direction of the thesis, and his influence is felt on every page. I am grateful also to my other supervisors, Peter Sheehan (who introduced me to the topic), Robert Brown and Stephen Voss for advice, encouragement, assistance, criticism and controversy variously mixed. In particular, Stephen Voss has read the whole and provided me with more pages of comments than either he or I care to remember.

Apart from my supervisors a number of people at A.N.U. have helped me greatly by their comments: in particular, Peter Herbst, Brenda Judge, Peter Mühlhäuser, Malcolm Rennie, Peter Röper and Peter Smith. In addition, I've had the benefit of comments on earlier drafts from Geoffrey Collins of Gonville and Caius College, Cambridge.

Several authors were kind enough to send me unpublished work and I am happy to thank them here: Dr. Tyler Burge (University of California); Dr. Carl Calvert (University of Washington); Professor Jack Nelson (Temple University); Dr. Rose Poole (Macquarie University); Dr. Leslie Stevenson (University of St. Andrews); Professor Gerald Vision (Temple University) and Dr. John Woods (Victoria University, Canada).

Finally thanks are due to Cheryl Griffin for tea and sympathy as well as for help with the bibliography.
ABSTRACT

The work defends a theory of relative identity roughly similar to Geach's. It is held that statements of the form 'a is the same as b' are incomplete until a general noun is specified after 'same'; and that items which are identical with respect to one general noun may be distinct with respect to another. These theses are referred to respectively as (D) and (R). Chapter One contrasts the theory of absolute identity with theories of relative identity, places the latter in their historical context, and suggests why they have some initial plausibility despite the universal acceptance of the absolute theory. Chapters Two, Three, Four and Five concern the nature of the general nouns which may be used to complete identity statements. We are particularly concerned with general nouns which convey criteria by which identity claims may be judged and with the structure of the system of classes which these nouns name. Certain over-simple assumptions of Wiggins' about this structure are rejected in Chapter Five. Chapters Six and Seven consider the thesis (D): in conjunction with (R) in Chapter Six, and independently in Chapter Seven. Whilst (R) does not entail (D), as has often been supposed, it is convenient to accept both principles in a context-free, (R)-relative identity theory in order to obtain
a closer match with natural language identity statements than is possible for the absolute theory. In Chapter Seven it is argued that whilst Wiggins' theory, which excludes (R) but includes (D), cannot be proven false it represents no more than a new way of stating the absolute theory and can be made redundant by Perry's alternative theory which keeps the classical identity operator. In Chapter Eight various general objections to (R) are rejected: arguments which seek to show that relations which satisfy (R) fail certain conditions on identity relations. Forms of symmetry, transitivity and reflexivity and a non-Leibniz substitutivity principle are developed for (R)-relative identities. On the other hand, Geach's general argument in favour of (R)-relative identity as a means of keeping one's ontology minimal is rejected on familiar grounds. Chapters Nine and Ten deal with particular examples of (R). In Chapter Nine it is maintained that (R)-relative identity theory solves the problem of constitutivity and resolves its associated 'paradoxes' such as the ship of Theseus. It is demonstrated that arguments to show that the relation between an item and its constituents is not identity are based on absolutist principles. In Chapter Ten the standard absolutist treatment of examples of (R) is rejected as invalid.
# TABLE OF CONTENTS

### Acknowledgements

iii

### Abstract

iv

## 1. ABSOLUTE AND RELATIVE IDENTITY

1

- **§1.1 The Theory of Absolute Identity**
  1
- **§1.2 Difficulties with Absolute Identity**
  3
- **§1.3 Some Advantages of Relative Identity**
  14
- **§1.4 Some Theories of Relative Identity**
  19
- **§1.5 The Relation Between Absolute and Relative Identity**
  31

## 2. GENERAL TERMS

34

- **§2.1 Singular and General Terms**
  34
- **§2.2 Count+ and Count− General Terms**
  35
- **§2.3 Notation for General Nouns**
  36
- **§2.4 Mass Terms**
  38
- **§2.5 A Tentative Subcategorization of General Terms**
  51

## 3. SORTALS

53

- **§3.1 Intuitive and Grammatical Criteria for Sortals**
  53
- **§3.2 Mereological Criteria**
  59
- **§3.3 Countability Criteria**
  62
- **§3.4 The Structure of Sorts**
  73
## 4. CRITERIA OF IDENTITY

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1</td>
<td>The Concept of Identity Criteria</td>
<td>79</td>
</tr>
<tr>
<td>4.2</td>
<td>Sortals and Criteria of Identity</td>
<td>83</td>
</tr>
<tr>
<td>4.3</td>
<td>Mass Terms and Criteria of Identity</td>
<td>94</td>
</tr>
<tr>
<td>4.4</td>
<td>Dummy Sortals and Criteria of Identity</td>
<td>114</td>
</tr>
<tr>
<td>4.5</td>
<td>Substantival Terms</td>
<td>118</td>
</tr>
</tbody>
</table>

## 5. ULTIMATE SORTALS

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1</td>
<td>Introduction</td>
<td>124</td>
</tr>
<tr>
<td>5.2</td>
<td>The Restriction Principle</td>
<td>130</td>
</tr>
<tr>
<td>5.3</td>
<td>The Uniqueness Principle</td>
<td>137</td>
</tr>
</tbody>
</table>

## 6. ON THE INCOMPLETENESS OF ABSOLUTE IDENTITY CLAIMS

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1</td>
<td>Some Preliminary Matters not in Dispute</td>
<td>149</td>
</tr>
<tr>
<td>6.2</td>
<td>The Relation between (R) and (D)</td>
<td>151</td>
</tr>
<tr>
<td>6.3</td>
<td>The 'Fregean Analysis'</td>
<td>161</td>
</tr>
<tr>
<td>6.4</td>
<td>Alternative (D)-theses</td>
<td>171</td>
</tr>
</tbody>
</table>

## 7. WIGGINS' (D)-RELATIVE IDENTITY THEORY

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.1</td>
<td>Wiggins' Theory</td>
<td>183</td>
</tr>
<tr>
<td>7.2</td>
<td>Bradley's Criticisms of Wiggins' Theory</td>
<td>189</td>
</tr>
<tr>
<td>7.3</td>
<td>Nelson's Criticisms of Wiggins' Theory</td>
<td>196</td>
</tr>
<tr>
<td>7.4</td>
<td>Perry's Criticisms of Wiggins' Theory</td>
<td>202</td>
</tr>
</tbody>
</table>
8. SOME GENERAL ARGUMENTS ON (R)-RELATIVE IDENTITY 214

§8.1 Formal Requirements of Identity 214

§8.2 Substitutivity Principles for Relative Identity 219

§8.3 Geach's Argument from Ontology 230

9. THE CONSTITUTIVE 'IS' 252

§9.1 Constitutive uses of 'is' 252

§9.2 The Nature of Constitutivity 258

§9.3 The Alleged Independence of the Constitutive 'is' 262

10. ON SOME EXAMPLES OF (R) 293

§10.1 The Five Ways of David Wiggins 293

§10.2 The Relativist's Alleged Referential Equivocation 305

§10.3 Are Relative Identity Statements Really Identity Statements? 326

Appendix 1: Wiggins on Sortals 339

Appendix 2: Cartwright on Quantities 346

Bibliography 351
Hamlet. But come, for England! Farewell, dear Mother.

King. Thy loving father, Hamlet.

Hamlet. My mother—father and mother is man and wife, man and wife is one flesh, and so, my mother. Come, for England!

(Hamlet IV.iii)
CHAPTER ONE

ABSOLUTE AND RELATIVE IDENTITY

1.1 The Theory of Absolute Identity. The theory of identity which appears in most (if not all) of our logic books is the theory of absolute identity. The theory can be set up in a variety of ways, by adding either one or two axioms onto ordinary quantification logic. Historically the first formulation was essentially that given by Frege in the Begriffsschrift (1879) using two axiom schemata. Following Church\(^1\), we may express these:

\[ x = x \quad \text{(reflexivity)} \]

and

\[ (x = y \& \phi(x)) \supset \phi(y) \quad \text{(indiscernibility of identicals)} \]

where (for present purposes only) 'x' and 'y' are syntactical individual variables and '\( \phi(\xi) \)' a syntactical predicate variable. The completeness of these axiom schemata, in the sense that every valid schema of identity theory is provable within the system, follows from the completeness of quantification theory and was first shown by Gödel in 1930.

A second version is due to Hao Wang and is based on the

single axiom schema, Wang's Law:

\[ \varnothing(y) \equiv (\exists x)(x = y \land \varnothing(x)) \]

Both reflexivity and the indiscernibility of identicals can be proved from Wang's law.¹ It follows that Wang's formulation and Frege's are equivalent.

In second order predicate calculus we can avoid the use of '=' as a primitive. Working from Leibniz' Law:²

\[(LL) \quad (\forall x)(\forall y)[x = y \equiv (\forall \varnothing)(\varnothing(x) \equiv \varnothing(y))]\]

we can derive very simply³ all the valid propositions of identity theory, of which the following are the most important for what follows: the indiscernibility of identicals:

\[(\text{In.Id.}) \quad (\forall x)(\forall y)[x = y \Rightarrow (\forall \varnothing)(\varnothing(x) \equiv \varnothing(y))]\]

---


3. Where they are not obvious appropriate proofs can be adapted from *Principia Mathematica*, *13, for example.
the identity of indiscernibles:¹

(Id.In.) \((\forall x)(\forall y)[(\forall \phi)(\phi(x) = \phi(y)) \supset x = y]\)

the reflexivity, symmetry and transitivity of identity, respectively:

(Refl.) \((\forall x)(x = x)\)

(Symm.) \((\forall x)(\forall y)(x = y \supset y = x)\)

(Trans.) \((\forall x)(\forall y)(\forall z)(x = y \& y = z \supset x = z)\)

It is this theory that I shall henceforth call the theory of absolute identity.

§1.2 Difficulties with Absolute Identity. It is clear that absolute identity theory is a well-established branch of logic. Not only that, but its principles seem to be employed in almost all our everyday or philosophical reasoning in which questions of identity arise. It is with good reason that both Geach and Perry, who take opposite sides on the issue of relative identity, call the absolute theory 'the classical theory of identity'.² The power and simplicity of this theory is such

---

1. Although the identity of indiscernibles is a theorem of absolute identity theory it cannot be said to be uncontro-versially a pre-theoretically valid formula of identity theory. See, for example, G.E. Moore, *Philosophical Studies*, (London: Routledge and Kegan Paul, 1922), p. 307, who thinks it obviously false and C.S. Peirce, *Collected Papers*, (Cambridge, Mass: Harvard University Press, 1933), 4.311, who thinks it 'all nonsense'. (Authors differ on exactly which formulae to label 'Leibniz' Law', 'identity of indiscernibles' and 'indiscernibility of identicals'. In what follows these three particular forms will be intended.)

that, as Geach says, it seems 'an enterprise worthy of a circle-squarer to challenge the classical theory of identity.¹ Nonetheless, the theory is open to very severe objections which I shall briefly advert to: some are well-known enough not to require detailed treatment, and my comments will be in no way conclusive.

The best known of the problems is the failure of Leibniz' Law when non-extensional predicates are substituted for '℘(x)'.²

To take the most hackneyed example:

(1.1) The number of the planets = 9.

is true, and so is:

(1.2) Necessarily 9 is greater than 7.

From these, together with Leibniz' Law, we can derive the false conclusion:

(1.3) Necessarily the number of planets is greater than 7.

Yet there is nothing in (LL) to stop this derivation of false conclusions from true premisses.

There is also a proof to show that, given (LL) and the necessity of reflexivity³, there are no contingent true identity

---

1. 'Identity', p. 4.


3. Which follows from (Refl.) by necessitation (Nec.) in even such weak modal logics as Peys' system, T. (Cf. G.E. Hughes and M.J. Cresswell, An Introduction to Modal Logic, [London: Methuens; 2nd edn., 1972], p. 31.)
The proof runs as follows:

\[1\] \(a = b \Rightarrow (\forall \phi)(\phi(a) \equiv \phi(b))\) ((In.Id.), U.I., \(a/x, b/y\))

\[2\] \(a = b\) (premiss)

\[3\] \(\Box(a = a) \Rightarrow \Box(a = b)\) ([1][2] M.P., U.I., \(a = (\xi) /\phi(\xi)\))

\[4\] \(\Box(a = a)\) ((Refl.), Nee.)

\[5\] \(\Box(a = b)\) ([3][4] M.P.)

\[6\] \(a = b \Rightarrow \Box(a = b)\) ([2][5] C.P.)

Attempts to avoid the first modal problem have been made by


2. In this and subsequent proofs the natural deduction system used is essentially that of Quine's Methods of Logic. (Quine's 'flagged variables', if any, appear between pointed brackets on the extreme right of each line.) The 'explanation' of the derivation of each line appears between parentheses to the right of that line. The abbreviations used there are taken from Copi's Symbolic Logic; use of the classical propositional calculus or standard quantification theory is marked by the letters 'C.P.C.' and 'Q.T.', respectively. Letters and numerals appearing in brackets within the 'explanation' are references to earlier lines in the proof or text used in the derivation.

3. For example, by Bede Rundle, 'Modality and Quantification', in R.J. Butler (ed.), Analytical Philosophy, op. cit., p.31. See also Prior, op. cit., p.206.
re-interpreting (1.3) as:

\[
(1.4) \quad \text{Necessarily the number which numbers the planets is greater than 7.}
\]

which is less obviously false, as 'the number which numbers the planets' is just another way of referring to the number 9 and (1.4) therefore amounts to no more than (1.2). The same manoeuvre also deals with the Barcan-Wiggins proof because if 'a = b' is true 'a' and 'b' are simply different names for the same thing and that thing is necessarily identical with itself; and thus, if we have that a = b, we ought not to baulk at '\(\Box(a = b)\)'. However, both arguments will go through if the necessity operator is replaced by an epistemic operator such as 'it was believed by Julius Caesar that'. It is scarcely plausible to maintain that if a = b it was believed by Julius Caesar to be so (where 'a' and 'b' are names of or definite descriptions designating individuals), although Kripke, Montague, Prior and Scott, for example, seem prepared to accept this conclusion.

Quine introduced the term 'referential opacity' for those contexts in which (LL) leads from truth to falsity: \(^1\) and it is generally held that restrictions must be placed on the range of the predicate variable '\(\varphi(\xi)\)' in (LL) in order to exclude referentially opaque contexts, for example by allowing '\(\varphi(\xi)\)' to range only over traits or 'real' properties. It is, of course,

---

one thing to recognize the need for such exclusions but quite another to decide how to draw the line. Despite much discussion it is still not clear what restricted version of (LL) would be valid.

Quite apart from the modal paradoxes (LL) suffers other disadvantages. It makes no allowance for change through which one self-same object gains or loses properties. As we have stated the law a man who is athletic in youth and sedentary in middle age will constitute a counter-example to the principle of the indiscernibility of identicals. There are at least two possible remedies to this: either we can restrict the range of the second-order quantifier to dated predicates to that both the youth and the man have the properties of being-athletic-when-young and also being-sedentary-when-middle-aged. Dating, of course, needn't be precise (how precise it needs to be will depend in general upon the rapidity of the changes) but only sufficient to distinguish periods when certain predicates apply from periods when they don't. On the other hand, we can rewrite (LL) thus:

\[(LL_t) \quad a = b \equiv (\forall \phi)(\forall t)[R_t(\phi(a)) \equiv R_t(\phi(b))]
\]

where 'R' is Rescher and Urquhart's primitive realization operator and 'R_t(p)' reads 'it is realized at time t that p'.

Either way it becomes possible for an object to change without

---

thereby becoming a different object.\textsuperscript{1}

The trouble now is that we appear to have licensed too much: an object may now change in any way we please, howsoever radical, without ceasing to be that self-same object. Suppose our man changes into a balloon; or, to put the matter more neutrally, suppose the man disappears and a balloon somewhat later occupies his place. There is nothing (except our common sense, nothing at least in our account of identity) to stop us saying that the man and the balloon are the same so long as the existence of the balloon doesn't overlap with that of the man. So long as the balloon appears after the man has disappeared then, for any dated balloonish predicate, \( \Psi\text{-at-}\! t'(\xi) \), which applied to the balloon, there is nothing to stop us saying that it also applied to the man, and any dated manish predicate \( \Psi\text{-at-}\! t(\xi) \) could also have applied to the balloon (where \( t < t' \) and the balloon appeared and the man disappeared somewhere in between). Similarly there is nothing to stop the man and the balloon switching between any number of different roles, becoming first a car, then a book, and then a distant star, so long as no two roles overlap.\textsuperscript{2}

\begin{enumerate}
\item I shall refer to both (LL\textsubscript{t}) and the version with second-order quantification restricted to dated predicates as 'tensed Leibniz' Law'.
\item This is argued by Peter Herbst in 'Names and Identities and Beginnings and Ends', (Unpublished, 1972), passim, but especially pp. 30-40 where he argues (with considerable success) that, on the classical view of identity, he is identical with Alexander the Great. At least there is no way in which we can refute the hypothesis by means of the classical theory of identity alone.
\end{enumerate}
Of course, common sense requires us to say that 'η was popped at t'' applies to the balloon and not to the man, and hence (the absolutist urges) the two are distinct by tensed Leibniz' Law. But to argue this way we have first to be sure that the two are distinct and hence that our common sense premiss is correct for unless we exclude the possibility that the two are identical we cannot be sure that 'η was popped at t'' applies only to the balloon and not the man. Herbst's argument is to the conclusion that tensed Leibniz' Law gives us no help in the matter. Of course, we can't prove that the man is identical with the balloon but we can't disprove it either. By the very nature of the case we are debarred from having evidence one way or the other. And so, as with other doctrines of immortality, hypotheses are left to flourish.

We could add to our account of identity a requirement of spatio-temporal continuity and this would exclude the case where there was a gap between the disappearance of the man and the appearance of the balloon, but it does not solve the problem completely. Firstly, we can easily construct a case in which the balloon is spatio-temporally continuous with the man. Secondly, spatio-temporal continuity would be a purely ad hoc addition to the theory of absolute identity which would destroy its great formal appeal (without necessarily improving its standing as an analysis of the notion of identity we normally use). Thirdly, the most important distinction between the absolute and the relative theories of identity (as we shall see) is that the relative theory employs several distinct identity relations, each related to a general noun (i.e., each acting as the identity relation for a given category of items),
whilst, on the other hand, in the absolute theory, though it may contain more than one identity relation (e.g., contingent, necessary, intensional, extensional identities etc.\(^1\)), each identity relation is absolute in that it is not restricted to expressing identities between members of a particular category of items. If the absolutist is going to characterize identity by tensed Leibniz' Law plus some condition of spatio-temporal continuity then this identity relation will be appropriate only for certain categories of items – those for which spatio-temporal continuity is an appropriate requirement (i.e., presumably, material bodies). Already, therefore, the absolutist's position would be giving way if he were to admit spatio-temporal continuity. I suspect that all three difficulties would recur if we sought to supplement tensed Leibniz' Law with any other principle instead of spatio-temporal continuity.\(^2\)

We can, moreover, make Herbst's argument more general.\(^3\)

If we are to use Leibniz' Law to decide whether items are identical or distinct we need to see whether they share all

---

1. For an example of the way in which an absolutist may be prepared to split up his notion of identity see D.Gabbay and J.M.Moravcsik, 'Sameness and Individuation', Journal of Philosophy, vol. 70, 1973, p.514n; although the authors seem to think that only one of their four types of identity can be called 'absolute identity', At any rate it is clear that all their identity relations are absolute in the sense in which we use the term to distinguish absolute from relative identity.

2. Attempts to combine the two are open to objections recently raised by Baruch Brody: If C is a necessary and sufficient condition for identity, and C* a necessary and sufficient condition for identity of a certain category of items then C can only be satisfied by items of that category when C* is, but this is open to empirical counter-examples. Cf. Brody, 'Locke on the Identity of Persons', American Philosophical Quarterly, vol. 9, 1972, pp. 331-332.

their predicates. But we can only do this when we can decide whether two predicates apply to the same item and this presupposes exactly the sort of judgement which we were hoping Leibniz' Law would enable us to make. And, of course, this problem applies to synchronic as well as diachronic identity statements. In using Leibniz' Law to make judgements of identity we are likely to hit other difficulties. The number of an item's predicates is infinite (for if it is six feet high then it is not seven feet high and not eight feet high and so on). This is not fatal, for we can, in some cases, consider infinite numbers of predicates and, in particular, we can lump all the predicates incompatible with a given predicate together so, in the example mentioned, we have only to consider 'ξ is six feet high' and 'ξ is not six feet high'. This helps somewhat, but then we have to take the requirements of tensed Leibniz' Law into account and consider each such pair of predicates at each moment of time. Moreover, there will be certain predicates for which it will be difficult, if not impossible, to decide whether they apply to the bearers of both names in an identity relation, without first knowing that both names are borne by the same item. How, for instance, could we decide whether 'ξ is visible before sunrise' is applicable to the Evening Star without knowing whether the Evening Star is identical with the Morning Star?

1. Cf. Herbst, p. 3, for this suggestion. It is doubtful whether relational predicates could be reduced to manageable numbers in this way.

Clearly Leibniz' Law provides no criterion against which we can judge identity claims; to achieve this the absolutist must go outside his formal treatment of identity. There is, of course, no reason why the provision of necessary and sufficient conditions for a concept should enable us to judge individual cases of the applicability of that concept, but it might be regarded as desirable where it is possible. At any rate, the absolutist owes us some such account if his theory is to be useful.

We have already seen\(^1\) that the principle of the identity of indiscernibles, which constitutes half of (LL), has been called in question by philosophers. Their opposition stems from the fact that even if we could check all the properties of two items and found that they were common to both we would still have no guarantee that they were one and the same item: the universe might, after all, repeat itself in various ways. Because we can imagine such a case we cannot treat (LL) as an account of what we mean by 'identity'. Attempts to overcome this problem make essential (but usually disguised) use of the verification principle. Typical is Dummett's attempt.\(^2\)

Dummett takes Leibniz' Law to provide a definition of identity. In arguing against the objections to the identity of indiscernibles he writes:

---

1. F. 3n, above.
If it is really the case that we can find no predicate... which is true of a but not of b, then nothing can possibly form an obstacle to our regarding a as identical with b."

But if he is really to support his conclusion that Leibniz' Law provides a definition of identity then he needs the full verificationist claim that if there is no discernible difference between a and b then that means the same as the claim that a and b are identical, rather than the disguised verificationist claim that 'nothing can possibly form an obstacle' to our regarding them as identical. The fact that we can envisage circumstances in which indiscernibility does not imply identity shows that indiscernibility does not mean the same as identity. So it appears that Leibniz' Law not only fails to give us a criterion by which to judge identity claims, but also to give a correct account of what identity claims mean.

With all this against it, it may seem puzzling that the absolute theory ever commanded any respect at all, let alone the all but universal assent that has, in fact, been accorded it. I think the reason the theory has proved so popular is that Leibniz' Law achieved its first successes in mathematics. If we take (LL) to define the identity relation between mathematical items the problems we've just been considering most often don't arise. The success of (LL) in mathematics has been

1. I'm sure this weak antecedent is unintended. What Dummett surely meant was 'if it is really the case that there is no predicate...'
2. Ibid.
convincing and has made it seem worthwhile to exercise a lot of ingenuity to equip the principle for use elsewhere. It is not my concern to argue here that absolute identity is indefensible but rather to argue that an alternative account is defensible and, in many ways, is advantageous. To this I shall now turn.

\[1.3\] Some Advantages of Relative Identity. Before I can expound the virtues of relativism it is necessary to have, at least, a vague idea of what the theory of relative identity is. It is not too easy to state the theory precisely and, in fact, there are several distinct theories not all of which have been explicitly differentiated in the literature. For the purposes of this section I shall content myself with three quotations from Geach which give a general idea of what the theory is all about and follow these with some comments on why this type of theory is attractive. In the next section I shall make some necessary distinctions between the different theories of relative identity.

First, then, Geach’s statement of his own point of view:

(I) When one says 'x is identical with y', this, I hold, is an incomplete expression; it is short for 'x is the same A as y,' where 'A' represents some count noun understood from the context of utterance - or else, it is just a vague expression of a half-formed thought.

1. Geach, 'Identity', p. 3.
(II) 'Being the same water' cannot be analysed as 'being the same (something-or-other) and being water'.

(III) On my own view of identity I could not object in principle to different As being one and the same B...

From this alone it appears that there are three relativist theses, all interrelated, but by no means all equivalent.

The motivation for (I) and (II) is rather different from that for (III). The most obvious motive for (I) and (II), but one which has not, to my knowledge, been avowed, is that in ordinary language we use the relation 'ξ is the same such-and-such as η' very frequently (if anything, more frequently than we use 'ξ is identical with η'). Moreover, we do use it in ways which are not adequately captured by 'ξ is identical with η' let alone by '=', its counterpart in absolute identity theory. As even an absolutist like Perry is forced to admit, the connection between the concept of absolute identity in second-order predicate calculus and the concept of identity employed in natural language 'is not clear, and may even seem quite puzzling.' If we are interested in the analysis of ordinary language and seek to use the techniques of formal logic in that analysis, it behoves us not to assume without question that the absolute theory copes with everything we would want to call an identity statement and that everything that it doesn't cope with can be conveniently assigned away to some other category.

2. Ibid., p. 157.
The motivation which Geach avows is one derived from Frege. Clearly the notions of unity and identity are closely related. Frege held that to say 'x is one' was either an incomplete way of saying 'x is one F' or else lacked clear sense. However, whilst Frege accepted this thesis about 'x is one' he did not extend the thesis to cover identity:

Identity is a relation given to us in such a specific form that it is inconceivable that various forms of it should occur.

This puzzles Geach because the connection between unity and identity which comes out in English as 'one and the same' comes out similarly in German as 'ein und dasselbe'. (In fact, this isn't quite so strange as Geach thinks it for, according to Frege, identity applies to objects whilst number applies to concepts, so we can't expect all the traits of number to pass over to identity.) At any rate Geach regards his own doctrine of relativized identity as an extension of Frege's views about 'x is one'.

However, this sort of philosophical motivation is both older and more general than Geach's references to Frege make clear. It involves what G.E.L.Owen has engagingly called 'polygamous predicates', that is, predicates which require the addition of a general noun in order to complete their sense and which may therefore be regarded as having different

forms depending on the general term which is added. A stock example is 'ξ is better than η': to say that a is better than b is incomplete in sense until the respect in which a is held to be better is specified. This doctrine can be traced back to Aristotle. There is evidence that Aristotle held that 'good', 'being' and 'existent', and 'one' were polygamous. It would be a rash or a learned man who claimed that this was a complete list of the concepts Aristotle held to be polygamous; and I shall leave the sticky exegetical problem of whether this is a correct reading of the passages referred to. It is clear, however, that the roots of conceptual polygamy are to be found in Aristotle. Other philosophers have added to the list. Panayot Butchvarov, for example, has suggested that 'resemblance'

1. G.E.L. Owen, 'Aristotle on the Snares of Ontology' in R. Bambrough (ed.), New Essays on Plato and Aristotle, (London: Routledge and Kegan Paul, 1965), p. 72. Geach has recently acknowledged this source and called such predicates 'transcendental' because of the way they 'jump across any conceptual barriers between different kinds of discourse' (Geach, 'Ontological Relativity and Relative Identity', [Unpublished, 1971], p. 1). For every polygamous (or transcendental) predicate there is a corresponding polygamous concept or general term—viz., the general term from which the predicate in question was formed (e.g., 'existent' from 'ξ exists').

2. **Topics** A (107a 4-17).

3. **Sophistici Elenchi** (182b 13-27); **Posterior Analytics** (92b 14); **De Anima** B (415b 13); **Metaphysics** H (998b 22-27; 1042b 15 - 1043a 7).

4. **Sophistici Elenchi** (182b 13-27); **Physics** H (248b 19-21); **Metaphysics, I** (1053b 25 - 1054a 19).
is such a concept. Russell, at one stage at least, added 'truth' and 'falsity'. Geach's theory of identity can be interpreted at least in part as the claim that identity is a polygamous concept. And this is not implausible, for whilst we know what it is to be the same dog or the same number (just as we know what it is for a dog or a number to exist) the question of what it is to be the same simpliciter is rather odd (just as the question of what it is to exist simpliciter is rather odd).

What of the motivation for (III)? Again, ordinary language provides the best justification. We might well say, e.g., that two cars were the same type of car, two word tokens are the same word type, two toys are the same colour, and so on. If this is all (III) commits us to it is hard to see why it has been so controversial. The examples given don't challenge (LL) so long as the absolutist can maintain a distinction between numerical and qualitative identity or resemblance. The absolutist can fairly easily find an analysis of them by accepting that, whilst the distinctness involved in each case is numerical distinctness (and is thus captured by (LL)), the sameness in each case is not numerical sameness (and thus requires some other analysis than that provided by (LL)). Of course this looks somewhat self-serving as the only means we have so far of distinguishing the two is whether or not they


meet the requirements of (LL) but this need not, perhaps, be so. Moreover, there are cases where the distinction between numerical identity and qualitative identity is not very obvious. There is at least a prima facie case for having a theory of identity (or, if you like, 'sameness') which treats the two even-handedly.

There is another group of examples which are inclined to be more puzzling and on occasion to lead to irresolvable wrangles about whether two things are 'really' the same. For example, people who agree on all the facts might still dispute as to whether two people who spoke different dialects really spoke the same language. A not unreasonable conclusion to such a discussion might be that they spoke the same language but not the same dialect. Quite how the absolutist might handle such a conclusion is difficult to see. He could scarcely claim that whilst 'ξ is the same dialect as η' expresses numerical identity 'ξ is the same language as η' does not. At any rate it is clear that ordinary language has a use for such sentences, that sometimes they make true statements and in at least some cases the absolutist account of them is not clear cut.

1.4 Some Theories of Relative Identity. Consider again quotation (II) which makes the claim that 'being the same water' cannot be analysed as 'being the same (something-or-other) and being water'. It is clear that in classical first-order predicate calculus with absolute identity, at least under some interpretations, it very well might be. 'a is the same man as b' in Quine's canonical notation becomes:
(1.5) \( \text{man}(a) \& \text{man}(b) \& a = b \)

and if one happens to like Quine's canonical notation there seems very little harm in this: the canonical paraphrase isn't obviously inadequate to the English original. However, if one accepts the point that Geach makes in (I) then (1.5) is not adequate because either the third conjunct requires completion by a general noun understood from the context (a completion which ought to be explicit in canonical notation) or it is 'just a vague expression of a half-formed thought', i.e., (presumably) deficient in sense. Thus if Geach is right in (I) he is right in (II).\(^1\)

Hence, we turn to (I). Geach is here making a claim which, following Wiggins\(^2\), I shall call '(D)'. Stated very generally, it might run:\(^3\)

---

1. As they stand there is a tension between the first quotation and the second, because the first requires completion by a count noun whilst the second uses an example involving completion by 'water' which is a mass term. The difficulty is more apparent than real, because Geach has admitted that his restriction of completions to count nouns was 'a slip of the pen' and that he allows mass terms as well. Cf. Geach, 'A Reply', Review of Metaphysics, vol. 22, 1968/69, p. 556; and 'Ontological Relativity and Relative Identity', p. 3.


3. In what follows the upper-case letters 'K', 'J' are constants standing for general nouns (i.e., general terms which are either nouns or noun phrases), the corresponding lower case letters are variables taking general nouns as values. The special type-face will be reserved for general noun constants and variables. The notation for general nouns will be developed further in Chapter Two. In future I shall take the liberty of altering quotations to make them conform with this notation.
Statements of the form 'a is the same as b' or 'a is identical with b' or 'a = b' require completion to give a statement of the form 'a is the same K as b'.

Although 'K' and 'J' are general nouns and not predicates, let us permit the expression 'K(ξ)' to be the (general noun) predicate 'ξ is (a) K'. Now following Wiggins rather loosely in terminology I shall say that a general term which follows 'same' in sentences of the form 'a is the same K as b' is in covering concept position. Such a term 'K' will be said to express a covering concept for that statement when it is such that 'K(a)' and 'K(b)' are both true. Thus in 'W.S.Porter is the same number as O.Henry', 'number' is in covering concept position but is not a covering concept for that statement.

(D) leads to two questions: Why do absolute identity statements require completion? and What sort of completion do they require? At least the options for answering the second question are easier to be clear about, and a satisfactory answer to the first can be given only in the course of analysing the theory (or theories) of relative identity. It is clear that the completing term must be a general term and that this general term must be either a noun or a noun phrase:

---

1. In future I shall use the term 'absolute identity claim' or 'absolute identity statement' to cover statements of the form 'a is the same as b', 'a is identical with b, or 'a = b'.

2. Ibid., p. 2.

3. In what follows I shall say simply (but inaccurately) that the general term is a covering concept. Pedantic readers may mentally reread it as 'the concept expressed by the general term is a covering concept'.

nothing else would do grammatically. But general nouns come several varieties and this gives us our first variants of the simple but vague (D). The first variant (D₁) construes the possible completions very widely: any general noun will serve as a completion. A much more restrictive version (D₂) requires that the completion be by a sortal general noun. And a third variant (D₃) might lie somewhere between the two, admitting other completions than just those by sortals but not admitting every general noun. Such a version might be Geach's admission of both sortals and mass terms. It must be noted that we are here proposing canonical languages for expressions which in ordinary English have 'ξ is the same ... as η' as main operator. Hence, if the theory we propose is to be adequate to ordinary English it will have to be adequate for the expression of those statement which do not have a sortal in covering concept position. This requirement does not rule out (D₂) automatically because it may be possible to rewrite statements such as 'This clay is the same clay as that on the potter's wheel last week' in the canonical notation in such a way that a sortal instead of a mass term appears in covering concept position.¹

But other things said by relativists suggest that a relativist policy might be none of (D₁)-(D₃). For example:

I maintain that it makes no sense to judge whether x and y are 'the same', or whether x remains 'the same', unless we add or understand

¹. I shall suggest ways of doing this in §4.3.
some general term - 'the same \( K \)'. That in accordance with which we thus judge as to the identity, I call a criterion of identity \( ^1 \).

Now what is meant by a 'criterion of identity' is not transparently obvious and it is not obvious that if we confine completions to general nouns which provide criteria of identity we shall have a (D)-thesis co-extensive with any of (D₁), (D₂) or (D₃). Thus there is scope for (D₄) which limits completions to general nouns conveying criteria of identity. As a final option I shall include (D₅) which limits completions to ultimate sortals. The motivation for this will become clearer when sortals are discussed, and it is included here for completeness. A general noun which acts as an adequate completion for identity statements on a given theory of relative identity will be said to be a completing concept on that theory. Thus whilst all completing concepts are covering concepts, the reverse is not true. \( ^1 \)

Quotation (III) introduces a thesis which has become known as (R):

\[
(R) \quad a \text{ may be the same } K \text{ as } b \text{ and not the same } J.
\]

As it stands the truth of (R) is rather uninteresting. We have

---


2. It should be noted that Wiggins does not distinguish between covering concepts and completing concepts.
already noted cases in which statements of this form may be true, e.g.

(1.6) This car is the same type of car as that car, but they are not the same car.

(1.7)'Dog' is the same type word as 'Dog' but they are not the same token word.

(1.8) This toy is the same colour as that toy but they are not the same toy.

There is a second group of statements, clearly distinct from those of the first group, which also have the form (R) and which are also clearly true, at least within a two-valued logic. These are cases in which the general noun in covering concept position is not, in fact, a covering concept. Examples are:

(1.9) W.S.Porter is the same man as O.Henry but they are not the same number.

(1.10) W.S.Porter is the same man as O.Henry but they are not the same boy (because Porter did not assume the name 'O.Henry' when he was a boy).

In a two-valued logic both conjuncts would be true. In a three-valued logic with conjunction defined by the matrix:

<table>
<thead>
<tr>
<th>&amp;</th>
<th>T</th>
<th>N</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td>T</td>
<td>N</td>
<td>F</td>
</tr>
<tr>
<td>N</td>
<td>N</td>
<td>N</td>
<td>F</td>
</tr>
<tr>
<td>F</td>
<td>F</td>
<td>F</td>
<td>F</td>
</tr>
</tbody>
</table>

we would assign the value 'N' ('neither true nor false') to (1.9) if we assigned the value 'N' to its second conjunct. Whether we would be happy assigning the same value to the
second conjunct of (1.10) is more debatable.¹

So far the relativist's case looks good and will remain so for a while as we shall reserve the absolutist reply for later. There are, of course, at least as many variants of (R) as there are of (D), for each variant of (D) will give a different method of completing 'a is the same ... as b' and hence give a different variant of (R). Finally, there are different variants of (R) depending upon how the formulae are quantified. There will thus be general, existential and multiply general, quantified formulae for each of the variants so far distinguished.

Of the two theses, (D) and (R), the latter has not received as much support as the former. Many philosophers, with what might roughly be termed Aristotelian motivations, have accepted (D) and rejected (R),² (I shall call them '(D)-relativists'). A hardy few, whom I shall call '(R)-

¹. R.H. Thomason, 'A Semantic Theory of Sortal Incorrectness', Journal of Philosophical Logic, vol. 1, 1972, p. 226, suggests that the relativist is forced to assign the value 'N' to statements such as the second conjunct of (1.9). I see no reason (and Thomason doesn't provide one) for saying that the relativist is forced to do this, although I can see that he might wish to and might find such a position congenial.

relativists', or simply 'relativists', have embraced them both,\(^1\) whilst some, with apparent perversity, have accepted (R) but not (D).\(^2\) The latter I shall call 'Lockean-relativists' on account of Odegard's attribution.\(^3\) Odegard does not quote Locke, but a passage which seems to support his attribution comes in Book II, Chapter 27, of the Essay. Talking of the way in which an oak grows from a plant into a great tree or a colt grows into a horse by the incorporation of new matter and the loss of old, Locke says:

... so that truly they are not either of them the same masses of matter, though they be truly one of them the same oak, and the other the same horse.\(^4\)

But then Locke goes on to say:

The reason whereof is, that in these two cases, a mass of matter, and a living body, identity is not applied to the same thing.\(^5\)

Without pursuing exegetic details this passage does raise problems for Odegard's attribution, because Locke seems to be saying not:

---


3. Ibid., p. 29 and Appendix, p. 38.


5. Ibid.
(1.11) The plant is the same oak as the great tree but they are not the same mass of matter.

but, where 'a' and 'b' are two names of an oak, and 'c' and 'd' names of masses of matter:

(1.12) a is the same oak as b & c is not the same mass of matter as d & a is not the same thing as c & b is not the same thing as d.

The text does support this unholy amalgam of relative and absolute identity, for Locke said that 'identity is not applied to the same thing' in saying that the plant and the tree are the same oak but not the same mass of matter, which suggests that in each conjunct the terms of the identity relation are different. And it is clear from other things Locke says\(^1\) that he regards the oak and the parcel of matter which composes it as distinct absolutely. Moreover, 'identity is applied' suggests that there is only one identity relation and not two involved.

But there are other passages concerned with person-identity which show that Locke, if he did not actually believe (R), came creditably close to doing so. He says for example:

[I]f the same consciousness ... can be transferred from one thinking substance to another, it will be possible that two thinking substances may make but one person.\(^2\)

\(^1\) Cf. ibid., §§2,5 (Fraser, vol. i, pp. 441,443).

\(^2\) Ibid, §13 (Fraser, vol. i, p. 454). Cf. also the tortuous passage (too long to quote) on the identity of Socrates in which he admits that 'it is hard to conceive that Socrates, the same individual man, should be two persons' (§21; Fraser, vol. i, pp. 461-462).
It is not clear that all such passages can be dealt with in the same way that we dealt with the oak tree example. Sometimes, he does seem to suggest such a treatment, for example, when he imagines that the 'soul of a prince ... enter[s] ... the body of a cobbler' he asks rhetorically:

...everyone sees he would be the same person with the prince...: but who would say he was the same man.¹

But then he seems to back-track:

I know that, in the ordinary way of speaking, the same person, and the same man, stand for one and the same thing.²

which plainly suggests that Locke thinks they stand for different things. But when he considers whether they do stand for the same thing or not, the only evidence he adduces for a negative conclusion is that 'person' and 'man' convey different criteria of identity - which was what was needed to generate a case of (R) in the first place. And, in an elaboration of this, where he gets closest to discussing our problem, he says:

It is not therefore unity of substance that comprehends all sorts of identity, or will determine it in every case; but to conceive and judge of it aright, we must consider what idea the word it applies to stands for: it being one thing to be the same substance, another the same man, and a third the same person, if person, man and substance, are three names for three different ideas; - for such as is the idea belonging to that name, such must be the identity;...³

¹. Ibid., §15 (Fraser, vol. i, p. 457).
². Ibid.
³. Ibid., §8 (Fraser, vol. i, p. 445).
But this leaves it unclear whether he believes (R), a version of (D), or something else altogether. Not surprisingly Locke was confused on the topic and seems to have fallen somewhere between the absolutist and the relativist positions: thinking that whilst it was important to know whether you were talking about man-identity or person-identity or substance-identity you could still inquire whether they were the same or different absolutely. This tangled discussion of Locke is of more than merely historical interest, for the difficulties into which Locke, as a proto-relativist, got himself have been raised more recently by Perry and Calvert in objection to Geach and we shall consider them more carefully in due course.

Another supporter of (R) whom Wiggins claims to have found is V.C. Chappell. Wiggins gives the following passage from Chappell as evidence:

[T]here are various criteria of identificational same-ness, and sometimes these conflict with each other.

However, it seems to me that Chappell does not have some version of (R) in mind here for the 'various criteria of identificational sameness' to which he refers are criteria such as exact similarity and spatio-temporal continuity, as he makes clear later on in the same page. These criteria may certainly conflict with each other without lending any support to (R).

1. Identity and Spatio-Temporal Continuity, fn. 1 (p. 65).
3. Ibid., lines 7-9 from the bottom.
George Pitcher gets much closer to Geach's view than Chappell, though without quite realizing it. He writes:

Start with middle C on the piano and play the diatonic scale of C upwards: after the seventh note, B, we say that you reach C again - not middle C, of course, but the C above middle C. It is the same note, only one octave higher.... There is no absolute necessity in this: someone unfamiliar with our musical nomenclature, upon hearing middle and the C above middle C, might well deny that they were the same note. And would he be wrong in doing so? Yes and no.¹

However, this does not agree entirely with Geach's theory because Pitcher is concerned to argue that there is 'an element of convention - indeed, a profound element of convention - in all sameness'² (presumably: in all judgements of sameness), whereas Geach's view is that even when adequate conventions are agreed upon a might still be the same K as b, yet a distinct J to b. Pitcher gets further towards this view in a footnote:

According to current usage in England, all pitches with the same letter name are indeed considered as being the same note; middle C and its octave, for example, are called 'the same note but different tones'. In the United States, theorists are adopting Milton Babbitt's term 'pitch-class' to express the concept of all pitches with the same letter name.³

Here the conventional element has become unimportant because conventions are agreed upon and yet the indeterminacy of

². Ibid., p. 123.
³. Ibid., p. 124n.
judgement as to whether middle C and its octave are the same remains: they are the same note but different tones, or the same pitch-class but different pitches.

§1.5 The Relation between Absolute and Relative Identity.

Geach seems to think that only the interpretation and not the syntax of absolute identity theory need be challenged by relative identity. He writes:

Absolute identity seems at first sight to be presupposed in the branch of formal logic called identity theory.¹

which clearly implies that he thinks that relative identity could as well be expressed in classical identity theory. This might well be so for (D)-relativism, but for (R)-relativism the case is different. Wiggins has a proof which, he claims², shows that (R) is incompatible with the formal requirements of classical identity theory. However, the proof requires him to extend the classical theory in a way which the person who wishes to combine the relativist and absolutist positions is not compelled to accept. Some preliminary formalization of the relativist theories is required here. Following Wiggins³ I shall take 'a \(=_{K}\) b' to read 'a is the same K as b'. On account of (D), the antecedent of (LL) is incomplete; but

1. 'Identity', p. 3. Geach's presentation of the classical theory is the one based on Wang's law.
2. Identity and Spatio-Temporal Continuity, p. 3.
3. Ibid., p. 2.
Wiggins gives a version of (In.Id.) which meets this objection:¹

\[(1.13) \ (\forall x)(\forall y)[(\exists k)(a =_k b) \supset (\forall \phi)(\phi(x) \equiv \phi(y))] \.
\]

Given the following example of (R):

\[(1.14) \ a =_K b \& \sim(a =_J b) \]

where

\[(1.15) \ K(a) \& K(b) \& J(a) \]

and the following, surely unexceptionable, premiss:

\[(1.16) \ J(a) \supset a =_J a \]

Wiggins can derive a contradiction from (1.13).² The argument, reconstructed, runs as follows:

1. \[(\forall x)(\forall y)(\forall k)(x =_k y \supset (\forall \phi)(\phi(x) \equiv \phi(y))) \ (1.13)\text{Q.T.} \]
2. \[a =_K b \supset (\forall \phi)(\phi(a) \equiv \phi(b)) \ (1.14)\text{Simp.,}[2]\text{M.P.} \]
3. \[(\forall \phi)(\phi(a) \equiv \phi(b)) \]
4. \[a =_J a \supset a =_J b \ (1.15)\text{U.I.,a} =_J(\xi)/\phi(\xi) \]

¹. Ibid., p. 3. In fact (1.13) differs from the formula Wiggins gives. In the first place, Wiggins restricts covering concepts to sortals. Permitting other types of general noun as covering concepts as (1.13) does merely gives the argument greater generality. Secondly, Wiggins gives an open formula but there can be little doubt that universal quantification over individual variables and existential quantification over general noun variables as indicated is the correct closed formula. Wiggins calls his formula 'Leibniz' Law', but that is merely terminological.

². Ibid., pp. 3-4.
Thus, if we permit a relative identity claim to carry a commitment to indiscernibility, we cannot simultaneously accept (R). Later on, I shall consider more reasonable ways in which to try and combine the two theories. That (1.13) is an unreasonable formula to adopt is seen by instantiating 'colour' for 'k', 'Mars' for 'x' and 'the Soviet flag' for 'y'.

[5] \( a =_f a \) \quad ((1.15)\text{Simp.}(1.16)\text{M.P.})

[6] \( a =_f b \) \quad ([4],[5]\text{M.P.})

[7] \( a =_f b \land \neg(a =_f b) \) \quad ((1.14)\text{Simp.} ,[6]\text{Conj.})
CHAPTER TWO

GENERAL TERMS

2.1 Singular and General Terms. So far as I can tell my use of 'general term' and 'singular term' is co-extensive with Quine's, despite the fact that Quine's method of making the distinction is not entirely satisfactory. According to Quine 'a singular term names or purports to name just one object, though as complex or diffuse an object as you please, while a general term is true of each, severally, of any number of objects', which leaves it open to the sort of objections that Strawson has raised. However, I do not intend to provide a more satisfactory criterion partly because I think the distinction is well-understood and partly because one has to start somewhere. Thus 'Al Capone', 'the Napoleon of Notting Hill', 'Pegasus', 'the round square' and 'that river' are singular terms; whilst 'river', 'queen', 'round', 'square' and 'unicorn' are general terms. In what follows I shall be almost entirely concerned with those general terms which are nouns or noun phrases, and which I call general nouns.

In theories of relative identity general nouns play a far more important role than they do in Quine's predicate calculus, Quine is quite content to make the singular term/general term distinction 'vaguely' because in his canonical


2. Word and Object, pp. 90-91.

notation the general term counts for little more than a constituent syllable of a predicate. On at least one occasion he does imply that a predicate simply is a general term but, either way, general terms in their own right are given little standing. However, in order to formulate a theory of relative identity it is necessary to be able to mark general nouns as distinct from the predicates in which they occur. It is also necessary to be able to distinguish sortal general nouns (e.g. 'dog', 'car', 'unicorn', 'cup') from mass terms (e.g. 'water', 'sugar', 'bread', 'phlogiston').

II.2 Count+ and Count- General Terms. The first great division among general terms is the division between count+ and count- general terms. The distinction between them is very easy to draw:

\[(GT1) \text{A term 'T' is a count}^+ \text{ general term iff 'T' is a general term such that 'There are n T's in r' makes sense where 'n' and 'r' are variables taking, respectively, numerals and regions appropriate to T's as values.}\]

\[(GT2) \text{A term 'T' is a count}^- \text{ general term iff 'T' is a general term such that 'There are n T's in r' does not make sense where 'n' and 'r' are as in (GT1).}\]

The count+/count- distinction among general terms partially cuts across the distinction between general nouns and other types of general term, for whilst all count+ general terms


2. The count+, count- terminology is that standardly employed in linguistics and is adopted here for that reason only.

3. Fred Feldman ('Sortal Predicates', *Nous*, vol. 7, 1973, p.270) considers a rather similar criterion as a criterion for sortals. It seems to me that the distinction between count nouns and sortals is worth preserving and a different criterion for sortals will be considered in Chapter 3. A further objection to Feldman's criterion (even as a criterion for sortals) is that it would admit proper names: it makes sense to say, e.g., 'There are three Johns in the room.'
are general nouns some count− general terms are also general nouns (e.g., 'gold', 'chastity'). Criteria for count+ and count− general nouns can easily be derived from (GT1) and (GT2) by replacing the requirement that 'T' be a general term by the requirement that it be a general noun.

2.3 Notation for General Nouns. In §1.4 and 1.5 it was necessary to introduce some notation for general nouns in order to be able to formalize the theory of relative identity. Here it will be necessary to extend that notation somewhat, although the distinctions we make here will not be all of these we require - it seems better to introduce notation as we need it rather than burden one section with too much unmemorable terminological detail. The special type-face introduced in §1.4 will continue to be reserved for general nouns with the exception of their use in forming general noun predicates - e.g. 'K(c)'. As in §1.5 the upper-case letters 'K' and 'J' will be general noun constants, and the corresponding lower case letters variables taking general nouns as values. To ensure a sufficient supply of such constants and variables priming and sub-scripted numerals may be added.

Within the class of general nouns we will chiefly be concerned with two subgroups: sortals within the group of count+ general nouns; and mass terms within the group of count− general nouns.1 (In what follows sortals will feature very much more than mass terms.) The term 'sortal' derives from Locke's happy use of the word 'sorts' - he coins 'sortal' from 'sort' on

1. A third group of some importance are non-sortal count+ nouns or dummy sortals, e.g. 'thing', 'entity', 'individual', 'set', 'collection of planks', etc.
analogy with 'general' from 'genus'. The term 'mass term' stems original from Jesperson's use of 'mass word'. The letters 'S', 'T', 'V' will henceforth be sortal constants, and 's', 't', 'v' sortal variables. Likewise 'M', and 'N' will be mass term constants and 'm' and 'n' mass term variables. Priming and subscript numerals will also be allowed, though in practice there will not be much call for them with mass terms.

1. Cf. Essay, Bk. III, Ch. 3, §15 (Fraser, vol. ii, p. 27). The Lockean term is chosen in preference to a variety of contenders. Strawson used to use 'individuative' which begs at least one of the questions of this work (Cf. 'Particular and General', Proceedings of the Aristotelian Society, vol. 54, 1954, p.254n) and, taking his cue from Aristotle, 'substance-name' (ibid., p.239), but later changed to 'sortal' (Individuals, p. 168). Geach uses 'count noun' ('Ontological Relativity and Relative Identity', p.6) and thereby obscures a distinction I want to make. Woodger, to whom Wiggins is much indebted, uses 'shared name' (Biology and Language, [Cambridge: Cambridge University Press, 1952], p.17). Quine talks of 'divided reference' (Word and Object, p.90) thereby implying a mereological criterion I wish to reject.

2. Cf. The Philosophy of Grammar, (London: Allen and Unwin, 1924), p. 198. As with 'sortal' there are many alternatives: Strawson uses 'material name' ('Particular and General', p.238) which conveys the unfortunate impression that all mass terms are names of materials. Terence Parsons tries to correct this impression by suggesting that we construe terms such as 'music' and 'hunger' as naming 'abstract substances' ('Analysis of Mass and Amount Terms', Foundations of Language, vol. 6, 1970, p.369). Goodman uses 'collective predicate' (The Structure of Appearance, [New York: Bobbs-Merrill; 2nd edn., 1966], p.54) which unfortunately suggests 'flock' or 'shoal'. Quine considers 'partitive term' (Word and Object, p. 91n) which is also used by Strawson (op. cit., p. 238) but this suggests a mereological criterion which I reject. The terminology I have chosen has been sanctioned rather by tradition than by principle.
Sortal and mass term predicates will be constructible in the same way as general noun predicates. I shall alter quotations to conform to this notation.

The task of the remainder of this chapter and of the whole of the next is to provide adequate criteria for mass terms and sortals, respectively. Although the issue for mass terms is, it seems to me, very much more complicated than for sortals the comparative unimportance of mass terms for present purposes somewhat justifies my skating over many of the complexities.

§2.4 Mass Terms. Intuitively count nouns seem to fall into at least three distinct groups. The first consists of what might be called the names of materials: e.g., 'gold', 'water', 'iron', 'wrought iron', 'frozen water', etc. To this list should be added, also, terms which behave in exactly the same way but which we would be less inclined to call the names of materials, e.g., 'groceries', 'meat', 'wheat', 'garbage', 'housing', and 'footwear'. The second group contains terms which behave similarly but are abstract, e.g., 'music', 'cricket', 'mathematics', 'information' and 'entertainment'. Colour words such as 'red', when glossed as 'redness', also belong to the second list. Terms on these two lists are what seem to be paradigm examples of mass terms. It will not be necessary for our purposes to distinguish very carefully between the two lists except to say that the terms on the first are concrete, and those on the second abstract. The third group is much more miscellaneous and includes such terms as 'intelligence', 'chastity', 'indigence', 'quality', 'viscosity', and 'efficiency' - typically abstract names of qualities. In
many uses these terms are singular rather than general, as in 'Chastity is its own punishment' (example due to Stephen Voss). But in this they do not apparently differ from such uses of mass terms as 'Snow is white'. They do, however, have general uses (e.g., 'John has intelligence') and in these uses it is tempting to distinguish nouns of this third group by the fact that they are so closely related to adjectives ('intelligence' to 'intelligent', 'virtuousness' to 'virtue', etc.) and this has led some linguists to suggest that all abstract nouns can be derived from adjectives.\(^1\) Whilst this does not seem to be the case with what I called 'abstract mass terms' it certainly has plausibility with the third group, which I shall call (following Strawson\(^2\)) 'characterizing terms'. As the expression 'characterizing term' is generally understood\(^3\) it includes adjectives, adverbs and verbs in addition to certain nouns. This would fit in fairly well if we were prepared to give an adjectival derivation for each characterizing noun. In view of the account I shall give of mass terms it seems likely that characterizing nouns can be accommodated within that account. It also seems fairly clear that, as far as relative identity is

\(^{1}\) For example, F. Bowers, 'The Deep Structure of Abstract Nouns', Foundations of Language, vol. 5, 1969, pp. 520-533. See also Strawson, 'Particular and General', p. 239; and Dummett, Frege, pp. 77-78. (Dummett makes the interesting claim that there could not be a language in which the noun form appeared but not the adjective.)

\(^{2}\) Individuals, p. 168.

concerned, the two groups behave in the same way. The issues involved in the analysis of characterizing terms are very obscure and it would take us too far out of our way to reach a satisfactory resolution of them.

Certain uses of mass terms can be construed on analogy with sortals. For example, if we say 'a is M' we are saying what sort of material a is, in very much the same way as when we say 'a is an S' we are saying what sort of a thing a is. However, subject uses of mass terms are quite different. In 'Snow is falling', 'snow' looks as if it might refer to one, particular, sprawling object, so that 'snow' in this sense is not a general term at all,¹ or to the universal snow, in which case we seem to be asserting that the universal is falling — from Plato's heaven presumably.² Men more ambitious than myself have sought to resolve these sticky ontological problems (and more besides) in one paper.³ My own aim here is much more modest: simply to say what mass terms are so we may recognize them when we see them. My purpose in adverting to problems of wider philosophic interest is simply to show, as cursorily as possible, that the semantics of mass terms is in a peculiar


². The second alternative is the one adopted by Strawson.

³. For example, Henry Laycock, 'Some Questions of Ontology', Philosophical Review, vol. 81, 1972, pp. 3-42.
state of indecision and that semantic characterizations of mass terms may be fairly hard to come by unless we are prepared to resolve these issues.

Despite the fact that the literature on mass terms is already quite large, very few authors have attempted to define the term. Instead the literature abounds with various interesting suggestions few of which we are invited to take as supplying necessary and sufficient conditions. Grammatical criteria are, of course, fairly popular but also fairly prone to counter examples. Chappell provides a convenient summary:

Mass nouns are distinguished grammatically from count nouns by not having plural forms and by not taking either the indefinite article or numerical adjectives; on the other hand they do, and count nouns do not, admit quantitative adjectives. Thus, though any common noun, including the plural forms of count nouns, can be preceded by 'the' and 'the same', and by 'any', 'no', and 'some', only singular count nouns can occur after 'one', or after 'a', 'each', and 'every'; and only plural count nouns can follow 'two', 'three', etc. and 'many' and 'few'. On the other hand, only mass nouns are preceded by 'much', 'little' and 'less' (note that 'more' has a numerical as well as a quantitative use, being opposed in the former to 'fewer' rather than to 'less').

The two major features here, failure of pluralization and admission of quantitative adjectives, are both open to counter examples. 'Oats', 'groceries', 'spaghetti', certain uses of 'beans' and 'potatoes', are all mass terms which take the plural ending - though not numerical adjectives. In much more

common-place mass terms, however, there are counter examples: 'water' sometimes admits the plural ending, as in 'Spa waters'. As for the admission of quantitative adjectives, characterizing nouns admit these also: 'much intelligence', 'less courage', 'little efficiency'. In fact, everyone of Chappell's grammatical criteria, allegedly distinctive of mass terms, applies equally to some characterizing terms. What seals the fate of grammatical criteria, however, is that many words double both as sortals and mass terms. There are quite a number of such terms: e.g., 'lamb', which is ambiguous between a type of meat and a juvenile sheep; others are 'rope', 'apple', 'sugar', 'beer', 'coffee', 'paper', 'cake', etc. The existence of this class of words effectively frustrates any attempt to distinguish between sortals and mass terms by purely grammatical criteria.¹

Strawson² attempts to distinguish between sortals, mass terms and characterizing terms by treating them all as names of universals and then considering the different latitudes permitted in what is to count as an instance of the universal. With sortals the situation is quite simple: only a cat can be an instance of cat. With characterizing terms, by contrast, the latitude is very great: a person, an action, or a plan are among the things which can be instances of intelligence. Mass terms, it seems, fall somewhere between the two: a lump of gold, a piece of gold and a ring of gold may all be instances of

² 'Particular and General', pp. 239-240. See also, Chappell, 'Stuff and Things', pp. 72-73.
gold. But despite their differences lumps, pieces and rings of gold all have something more in common than their goldenness: they are all material objects. Now one of the troubles with this account is that it is scarcely, as it stands, sharp enough to do what we want. We can, however, sharpen it somewhat in the following way. An instance of $S$ is always a member of one sort, namely $S$. By contrast an instance of $M$ can fall under many sortals, but all instances of $M$ must fall under the same dummy sortal, namely that appropriate to $M$. Finally, instances of a characterizing noun need not even fall under the same dummy sortal but may be of radically different types. Of these three statements only the first seems to be unimpeachable. The third, whilst it doubtless works well for 'intelligence' and 'courage', fails with 'brittleness' and 'viscosity' for only a material object can be an instance of brittleness and only a fluid of viscosity. ¹ The objection to the second statement, which is the one we are chiefly interested in, is more fundamental. We can seriously doubt whether a piece of gold is an instance of $S$ at all. For surely a piece of gold is an instance of the universal named by the sortal 'piece of gold'. ² Of course, this leaves us open to the possibly embarrassing question: What is an instance of gold? But we

---

1. In these cases the 'instance of' terminology sits unhappily, but such examples can be construed exactly analogously to 'intelligence' where 'instance of' fits better: one guesses that the difference is purely idiomatic.

don't have to answer this in order to attack Strawson's
criterion. We can also find counter examples to the second
statement: for example, 'red' (in its mass term sense) has
instances of such diverse forms as pillar boxes, sunsets and
after-images - so it fails Strawson's criterion for mass terms.
(In fairness to Strawson, I must point out that he does include
it among characterizing nouns - a classification which rather
runs against my intuitions.) Strawson's criterion does not
seem to me to be a promising line for further investigation.

D.S. Clarke claims that:

Unlike ordinary substantives [mass terms] do not
express attributes of shape and boundary by which
we identify an object as the same on different
occasions and distinguish it from other objects
of the same general kind.¹

He calls this the 'fundamental feature' of mass terms. He is
concerned simply to distinguish sortals from mass terms, but
even for this limited task his 'fundamental feature' fails.
'Colony of ants', 'lump of coal' and 'number' are all sortals
yet do not in any obvious sense express 'attributes of shape
and boundary'. If we take these attributes very broadly so
that 'number' expresses attributes of boundary which, for
example, distinguish numbers from other mathematical entities,
then it seems to me that a mass term such as 'gold' will
express attributes of boundary which, for example, distinguish
gold from other chemical elements. Moreover, dummy sortal
such as 'thing' pass this criterion for mass terms.

¹ 'Mass Terms as Subjects', Philosophical Studies, vol. 21,
Although Clarke does not provide us with a criterion he does, I think, provide us with a clue. The clue is that, within broad limits, mass terms refer to relatively undifferentiated bodies of stuff and that a mereological criterion might be the most useful way of distinguishing them. There are a variety of such criteria which we may choose from, some of which we can dispose of very briefly. The following criterion might be suggested:

A term 'K' is a mass term iff if you divide something which is K into two parts then each part is K.

But on this criterion 'water' will fail as a mass term for if the method of division is electrolysis then the result of dividing water will not be water. And similarly for every chemical substance, there is some method of division which does not preserve the sort of substance we started with. Even in such cases as 'music' it is possible to divide some music in such a way that music does not result (for example, if you split it temporally into units of less than a note's duration). So let us rephrase the criterion in such a way as to avoid this reliance on the actual process of fission:

A term 'K' is a mass term iff all parts of a thing which is K are K.  

But this is no better: on the atomic theory of matter any chemical substance will have parts which are not of that same type of substance. And again, music will have temporal parts which are not music. Chappell draws attention to a related feature, which he calls the homogeneity of stuffs.\(^1\) Anything which is gold is gold uniformly, unlike something which is a cat (and which is not therefore a cat uniformly). This amounts to the criterion we've just considered and rejected. It is open to all the same objections and we may note some more: cheese may have holes in it, gold rings are not always gold uniformly but often comprise gems as well.

If fission and parts fail to provide the criterion perhaps fusion and wholes will do better:

\[(MT1)\] A term 'K' is a mass term iff the fusion of any two parts which are K is K.

This works much better as it captures the cumulative reference feature of mass terms which Quine has pointed out.\(^2\) It lets through all the terms in our first group, which is all to the good. It is still, however, open to counter examples: for one thing it admits characterizing adjectives. For example, the fusion of any two parts which are heavy will be heavy. Thus 'heavy' is a mass term on (MT1). We could avoid this result by imposing the additional restriction that 'K' is a noun. This would exclude adjectival characterizing terms. However, the

---

1. Chappell, ibid.
2. Word and Object, pp. 91, 97.
criterion would still include 'thing' and other dummy sortals as mass terms for the sum of any two parts which are things is also a thing. However, we could effect the appropriate exclusions in the following way:

\[(MT2)\] A term \(K\) is a mass term iff \(K\) is a count-noun and the fusion of any two disjoint parts which are \(K\) is \(K\).

In the criterion 'fusion' is to be taken with the sense it is given in the calculus of individuals: The fusion of two individuals is defined as that individual which overlaps all and only those individuals which overlap at least one of the two. \(^1\) 'Disjoint' is also used in Goodman's sense, namely, two individuals are disjoint iff there is no individual which overlaps them both. It is useful to give a more formal version of \((MT2)\) because substituting English nouns for \(K\) in the last part of the criterion doesn't always give an easy English reading. Using the calculus of individuals and our notion of a general term predicate gives us:

A term \(K\) is a mass term iff \(K\) is a count-noun and \((\forall x)(\forall y)((K(x) \& K(y)) \& x \perp y \supset K(x + y))\).

where \(x \perp y\) reads 'x and y are disjoint' and is defined as above.

\(^1\) More formally,

\[a + b =_{df} (\exists x)[(\forall y)(y \in x \cap (y \in a \cup y \in b))]\]

where 'O' is Goodman's primitive, two-place overlapping operator. Cf. The Structure of Appearance, pp. 50-51.
The reason for adding the disjointness condition is that without it singular terms might get included as mass terms. For example, 'Napoleon Bonaparte' would be a mass term, for the fusion of any two parts each of which is Napoleon will be Napoleon: it being the case that any two parts which are each Napoleon Bonaparte must be identical and will thus be identical with their fusion.\(^1\) It might be thought that the most natural way to exclude singular terms would be to impose on the first clause of the criterion the requirement that only count-general nouns could be mass terms. But this I am reluctant to do for Quine's sake. According to Quine mass terms in subject position are singular terms referring to one sprawling object. Whilst I'm not prepared to defend Quine here, as it would take me too far out of my way, it offends against good philosophical sportsmanship to undermine another man's position by mere definitional fiat.

Criterion (MT2) seems to me to be adequate in that it lets through all the terms in the first and second lists. The problem now is whether (MT2) lets through characterizing nouns. It seems that it does: if we can talk of fusing parts of

---

1. Richard Routley has suggested amending (GT1) to let in proper names as count nouns. This would enable us to drop the disjointness condition in (MT2) - 'Napoleon' would then be excluded as not being count. This approach would produce a parallel amongst count nouns to the singular uses of count nouns. For a sub-classification of nouns which cuts across the singular term/general term distinction see D.Gabbay and J.M.Moravcsik, 'Sameness and Individuation', pp. 520-524.
cricket to get more cricket then we can surely talk of fusing parts of intelligence to get more intelligence. Admittedly, perhaps we don't so often do it with 'intelligence' as we do with 'cricket' but that is beside the point. So we have a criterion which lets in all mass terms and whose only defect is that it lets in characterizing terms as well. What remedy is there? It seems to me doubtful whether we need a remedy. Characterizing terms are a little understood group of terms and a lot more work on their analysis is needed. It goes far beyond the scope of this project to do any of that work here, but in lieu of it we might hazard the following guess. If, as I suspect, characterizing nouns in surface structure are derived from adjectival forms in deep structure, it could well be that the nouns so derived turn out to be mass terms: that would not be at all counter-intuitive. The fact that some characterizing nouns seem to fit the criterion so oddly (e.g., 'the fusion of any two parts which are viscosity is viscosity') might easily be explained by means of the adjectival origin of the nouns (from 'viscous'). This would explain the grammatical similarities between mass terms and characterizing nouns, which we noted in discussing Chappell's grammatical criteria. This is so far only a speculation, but our ignorance of characterizing nouns is so great that I see no reason to amend (MT2) to exclude them at present. Of course, it may

1. Jesperson, for example, includes them. Cf. Philosophy of Grammar, p. 198.
turn out, when they are investigated, that they should not be lumped together with mass terms but that is a bridge we should cross when we are forced to it.

A final point needs to be made concerning the criterion: it admits plural sortals. Consider the plural sortal 'cows', it passes the first clause of the criterion for 'There are n cows in r' does not make sense, so 'cows' is a count noun. Moreover, it passes the second clause of the criterion for the fusion of any two parts which are separately cows results in more cows. The grammar of plural sortals and mass terms is almost identical: we have 'the cows' but not *'a cows', *'each cows', *'every cows'. Numerical adjectives need a little more care. What we have in 'two cows' is not a sortal, but the pluralization of a sortal, admitting a numerical adjective. So we have the schema:

\[(2.1) \quad \text{two pl(...)}\]

rather than the schema:

\[(2.2) \quad \text{two ...}\]

where the blanks are filled by sortals and 'pl(...)' is a function from general nouns to pluralizations of them. Now neither plural sortals nor mass terms satisfy schema \((2.1)\) - there being no pluralization of a plural sortal nor of a mass term - whilst plural sortals (and not mass terms) satisfy the erroneous \((2.2)\). The main grammatical difference between plural sortals and mass terms is in quantitative adjectives. Plural sortals do not take 'much', or 'little' and only colloquially 'less' (as in 'There are less cows than there used
to be). But since the grammatical criteria do not provide a hard and fast rule on what terms are to be mass terms, some exceptions are tolerable. Now the admission of plural sortals as mass terms is not as disastrous as might at first be thought. Indeed it is the sort of move which a number of people have urged quite independently of our criterion for mass terms.¹ So far as I can see it constitutes no ground for rejecting the criterion.

§2.5 A Tentative Subcategorization of General Terms. Comments so far suggest that the whole distinction between singular and general terms is much more complex than we suggested earlier. It now looks as though (whilst terms may be sortals, mass terms or characterizing terms) they may, in at least some categories, have both singular and general uses. To try and bring some order as briefly as possible into that part of the topic of general terms which we subsequently need I offer very tentatively on the next page a classification of general terms (or, of general uses of terms).² A more satisfactory treatment requires much further work but this is the best I can do here for we now have other things to attend to.

1. E.g., Henry Laycock, 'Some Questions of Ontology', op. cit. In Pidgin exactly the same construction may be used for mass terms as is used for pluralizing sortals. (Thanks to Peter Mühlhäuser for information on this point.)

2. To present the classification now, before our treatment of sortals, is not so audacious as it might appear for the difficulties in the subcategorization of count nouns are very much less severe.
General Terms

Count+
  Sortals
  Dummy Sortals
  Mass Terms
    plural sortals
    concrete mass terms (material names)
    abstract mass terms (including characterizing general nouns)

Count−

Characterizing Terms
  (adjectives, adverbs and verbs)

Fig. 1
CHAPTER THREE

SORTALS

3.1. Intuitive and Grammatical Criteria for Sortals. The distinction between sortals and other general terms is one that is obvious to pre-philosophic common sense. To say of something that it is a book is very different from saying that it is red or large. In saying that it is a book we may be said to be classifying it; in saying that it is red or large, to be characterizing it. But the use of these two terms certainly does not provide the required demarcation line, for clearly we may, in calling something large, be said to be classifying it; and there is no clear sense in which, in calling something a book, we can be said not to be characterizing it. Clearly, we need something better than this rough and ready intuition to make the required distinction.

The first philosophical discussion of the distinction seems to have been given by Aristotle in the Categories but what he says is so obscure that it is more likely to confuse than to clarify. Aristotle distinguishes as 'secondary substances' those substances the terms for which tell us what a thing is. Although this way of talking has been adopted by Wiggins it does not seem to me to provide anything like a viable and precise distinction between sortal and non-sortal terms - at least, unless we can give some characterization of what it is to say

1. Identity and Spatio-Temporal Continuity, e.g., p. 27; fn. 2 (p. 65.)
what something is. The distinction is sometimes made between substantival and adjectival terms (e.g., by Aquinas\(^1\)), but grammar can be misleading here for some substantival terms (e.g., 'gold' and 'water') are not sortals but mass terms. On the other hand, if the discussion is pursued as a distinction between substance and properties it leads to metaphysical deep waters which we might well wish to avoid. Thus, whilst it is easy to appreciate the intuitive distinction between sortals and non-sortals, it proves very difficult to draw a precise boundary between the two which doesn't do violence to our intuitions.

Whilst straightforward ('large scale') grammatical distinctions, such as that between substantival and adjectival, do not provide us with the required criterion, there are a number of grammatical features which, we might hope, would pick out sortals. John Wallace summarizes these features:

Sortal predicates are grammatically substantival. They admit the definite article, the plural ending, the pronouns 'same', 'other', and 'another', and quantify [sic.] words: 'all', 'every', 'some', 'a', 'many', 'few', 'one', 'two', 'three',... They admit the demonstratives 'this', 'that', 'these', and 'those'. They do not admit 'much'.\(^2\)

1. **Summa Theologica**, Ia q. 39, art 3 c; ad lum, art 5 ad 5um. This distinction is echoed by John Lyons, *An Introduction to Theoretical Linguistics*, p. 338.

2. **Philosophical Grammar**, (Stanford University, Unpublished Doctoral Dissertation, 1964), p. 70. It has become common in the literature to refer to sortal terms as 'sortal predicates'. I want to keep the two expressions distinct but I will not amend quotations unless there is a danger of confusion.
However, these features do not provide a means of distinguishing sortals from other types of term. There are three main objections. In the first place there are a large number of quirky exceptions. For example, both mass terms and some characterizing terms admit 'same'. We can talk of 'the waters of Babylon' though 'water' is a mass term which we wouldn't expect to take the plural. 'Will' (in the sense of volition rather than that of a legal document) has many peculiarities for we can talk of 'the will' in philosophical psychology (though many philosophers would regard this as a misleading locution) and also of 'a will' (as in 'He has a will of his own'—curiously the philosophers who treat 'the will' with scepticism are often those who have to treat 'a will' as an unproblematic ordinary usage). On the other hand, we can make no sense of *'wills', *'all wills', *'every will', and *'much will' (though 'much effort of will' is all right). But quirks are the least of the three problems. More important is that the grammatical criterion lets in all dummy sortals: often count nouns of extremely wide applicability (e.g., 'thing', 'entity', 'item', 'object', 'individual', etc.) but not invariably since 'property', 'centre', 'element', 'part', and 'set' are all dummy sortals. However, Wallace hopes that dummy sortals may be excluded by further restrictions, so this need not concern us unduly at this stage. To my mind the most conclusive argument against the grammatical criterion is that it fails to distinguish the sortal and mass term roles of those words, noted in §2.4, which can be both sortals and mass terms. It seems to me that a purely grammatical criterion for sortals, even if sufficiently sophisticated to exclude the odd exceptions
and even if supplemented by a restriction against dummy sortals, would be inadequate to mark out the class of terms intuitively accepted as sortals.

Another reason supports this view. Our intuitive notions of what a sortal is are semantically based. Even were we able to formulate a set of purely grammatical criteria co-extensive with sortalhood (an ambition which I believe lies beyond any hope of achievement), we would still have missed the main point of making the distinction, which lies in the different ways in which the different types of term refer. Moreover, the grammatical features which Wallace suggests are mostly peculiar to English (e.g., admitting 'another', 'few', etc. although taking the definite article and the plural ending are more general). Although categorization of terms varies very much from language to language we might hope to provide a criterion which would tell us whether a term in a given language was a sortal in that language or not. The distinction must, therefore, be sought semantically instead of grammatically.

What sort of an introductory gloss may we put on sortals before we start our search for adequate semantic criteria? One of the most reasonable glosses is to assert that any sortal can act as covering concept in some identity statement. As Wiggins

1. For example, the English 'grape' is a sortal whereas the German 'Traube' and the Russian 'vinograd' are mass terms, like the English 'fruit'. On the other hand, the French 'fruit' and the Russian 'frukt' are sortals.
puts it: 'One of the clear facts about sortal concepts is that as a matter of fact they are used to cover identity statements.' Yet a simple definition of a sortal as that which covers an identity statement - i.e., 'K' is a sortal iff 'x is the same K as y' is an identity statement - is unsatisfactory in several respects. Firstly, such a characterization fits our intuitions very badly. 'Clay' in 'This clay is the same clay as that on the potter's wheel last week.' is certainly a covering concept for what has every appearance of being an identity statement and yet is paradigmatically a mass term. Of course, we might add the requirement that 'K' be a completing concept for the identity statement and then hope to be able to show that all non-sortals failed as completing concepts. But all completing concepts are relative to a theory of (D)-relative identity and the only version of (D) which we could guarantee would do what we wanted in excluding non-sortals as covering concepts would be (D2), which precisely limits completing concepts to sortals, and that would make the whole thing circular. Secondly, the concept of an identity statement is not perhaps the best understood term to take as a primitive in the definiens. Authors - particularly those who disagree about absolute and relative identity - disagree on whether a given statement is an identity statement in at least some cases. For example, some statements

1. *Identity and Spatio-Temporal Continuity*, p. 29; see also Geach, *Ontological Relativity and Relative Identity*, p. 6 (importantly, Geach claims to be talking of count nouns in this connection).
regarded as identity statements by Geach are held to be statements which involve the constitutive 'is' (which is allegedly different from the 'is' of identity) by Wiggins.

Thirdly, we are hoping to throw some light on the notion of an identity statement by investigating sortals; not vice-versa. This simple equation of a sortal with a covering concept in an identity statement will scarcely further our study. Finally, it becomes clear that if we simply equate sortals with covering concepts we will not be able to draw up a list of sortals irrespective of the sentences in which they occur. For example, in

(3.1) This book is the same colour as that.
'colour' is not a covering concept for an identity statement because (3.1) is not - so Wiggins would claim - an identity statement. However, in the identity statement

(3.2) The colour of this book is the same colour as the colour of that book.
'colour' is a covering concept. Thus in (3.1) 'colour' would not be sortal, whilst in (3.2) it would. Sheehan holds that we cannot classify terms as sortals or non-sortals but only uses of terms as sortal or non-sortal uses. On the other hand, I would prefer to have the sortal/non-sortal distinction as a distinction among terms. My grounds for this preference are firstly that this is the way the notion of a sortal is usually taken; and secondly, as Wallace points out, the whole of language

---
is sortal ridden and to attempt a criterion for every context in which a term might have a sortal use is likely to be a lengthy business in linguistics. For the moment, at any rate, I want to leave the question of the relation between sortals and identity statements open.

§3.2 Mereological Criteria. Since a mereological criterion worked well for mass terms and since sortals are often directly contrasted with mass terms it seems reasonable to begin our search for a semantic criterion for sortals by looking at mereological criteria. This feature is remarked also by Frege\textsuperscript{1} and Quine\textsuperscript{2}. Wallace provides a criterion, or at least, a necessary condition, thus:

If 'K' is a sortal predicate then you cannot divide a 'K' in two parts and get two 'K's.\textsuperscript{3}

This, as he says, rules out 'thing', 'red thing' and 'physical object' (though not 'centre'). However, 'cloud', 'garden hose', 'perfect diamond', 'amoeba', 'cell' and protozoon' all fail this criterion. On the other hand, some mass terms satisfy the criterion if the division is made appropriately, e.g. 'water' where the method of division is electrolysis, whilst 'indivisible thing' would pass, as Wallace points out in a later article.\textsuperscript{4} Moreover, if we understand 'divide' literally as

\begin{list}{1.}{
\item 1. Foundations of Arithmetic, p. 66.
\item 2. Word and Object, §19, pp. 90-95.
\end{list}
meaning 'rend in two' it will also rule out 'piece of wood' and 'lump of coal'. To counter this Wallace proposes taking 'divide' metaphorically in the sense of 'divide conceptually'. I must confess that I'm not at all clear what it is to divide something conceptually. But Wallace then restates his criterion as:

If 'K' is a sortal predicate, then no K has two parts that are Ks.

I'm not sure that this new criterion will do the work Wallace expects it to. It seems to me that 'lump of coal' is a sortal term and that, indeed, a lump of coal may have two parts both of which are lumps of coal. What has to do the work here is the gloss we put on 'part', but it is not obvious that 'part' will do any more work than 'divide' in the old criterion, at least unless we give it a new gloss. Perhaps we could gloss it (rather vaguely) as 'natural division' with the paradigm in mind of (say) a car's being 'naturally divided' into such parts

1. Philosophical Grammar, p. 73. Both versions of the criterion are stated simultaneously in his article, op. cit., pp. 9-10. In the article Wallace seems to have given up the hope that any or all of his criteria provide necessary and sufficient conditions for sortalhood. He says, for example, 'it is impossible to extract ... any short, clear, true formula for distinguishing sortal predicates from others' (p. 9) and to accept (p. 10) that the notion of a sortal is un-analysable and obscure. He hopes that his theory of sortal-restricted quantification may clarify the concept (p. 11). However, since in that theory sortals are merely loaded into pockets in the quantifiers it does not seem that much clarification results - we still do not know precisely which terms may be thus loaded. Whilst we may agree with Wallace that the formula for distinguishing sortal terms from others is not likely to be short and clear, we may at least hope to get one which is true.
as a chassis, a body, an engine, etc.; or a dog's being 'naturally divided' into such parts as a heart, legs, a tail, etc. But, apart from its not being quite clear what is to constitute a natural division of a thing into its parts, the very same could surely be said of a lump of coal: for a fractured lump of coal could very well be said to divide naturally into two or more parts each of which was a lump of coal; or even more obviously, a lump of rock containing intrusions of different types of rock (e.g., a lump of granite with intrusions of quartz) could be said to divide naturally into various lumps of rock, some of granite and some of quartz. And, of course, more obviously still, a work of art may divide naturally into parts, each of which is itself a work of art. Wagner's Ring Cycle and Lawrence Durrell's Alexandrian Quartet do so. Whilst all the terms urged here as counter-examples to the division criterion seem to me to be indubitable sortals they are all peculiar in that they are noun-phrases including a mass term and the preposition 'of'. I shall call such noun-phrases 'sortalized mass terms', and shall have something more to say about them (though by no means enough to constitute a full analysis) in §4.3.

An alternative mereological criterion is the following:

If 'K' is a sortal then no K results from the fusion of two (or more) Ks.

But this suffers from some of the same problems as the earlier criteria. 'Garden hose', 'pile of stones', 'table' and 'garden' all fail this criterion. We can reject all three mereological criteria.

\[3.3\] **Countability Criteria.** Strawson presents a brief and simple – too simple – criterion thus:

A sortal universal supplies a principle for distinguishing and counting individual particulars which it collects. It presupposes no antecedent principle, or method, of individuating the particulars it collects. Characterizing universals, on the other hand, whilst they supply principles of grouping, even of counting, particulars, supply such principles only for particulars already distinguished, or distinguishable, in accordance with some antecedent principle or method.¹

Let us consider the counting criterion further. Wallace makes Strawson's criterion a little more precise:

If \(K\) is a sortal predicate, you can find how many \(Ks\) there are in such and such a space by counting \(Ks\). And, if \(K\) is a sortal predicate, it makes perfectly good sense to ask someone how many \(Ks\) there are in such and such a space.²

In his subsequent paper Wallace develops this a bit more:

(a) A sortal predicate \(K\) provides a criterion for counting things that are \(K\). (b) If \(K\) is a sortal predicate, you can find out how many \(Ks\) there are in such and such a space by counting. (c) If \(K\) is a sortal predicate, it makes sense to ask someone how many \(Ks\) there are in such and such a space.³

The counting criterion seems to be essential in some way or another to sortals. But we find that it is very difficult to formulate the criterion in such a way as to include all and only sortals. In Wallace's (b) and (c) we must construe 'space' very widely for 'number' is a sortal but numbers are not spatial items in any literal sense. Wallace takes care of numbers by noting that we can say 'how many natural numbers there are less than seven'. But the criterion is still too strong for we cannot say how many grains of sand there are on Bondi beach not because it is logically impossible for us to count them but because there are just too many of them for us, in fact, to be able to do so. In addition we may not permit the space in which we are counting Ks to be infinite because again it would (in general) be impossible to say how many Ks there were in such a space. Some of these problems can be solved by rephrasing Wallace's (b) as follows:

If 'K' is a sortal term then we can, in principle, find out by counting how many Ks there are in a certain, finite space appropriate to Ks.

But this refined version doesn't help us with sortals such as 'fraction', for we cannot, even in principle, find out by counting how many fractions there are less than seven or even less than one, for there are infinitely many of them. Yet 'fraction' is a perfectly good sortal. It may be possible to include 'fraction' if we treat the space appropriate to fractions as the space occupied by one fraction. But this sort of gerrymander is scarcely very decorous. We may be able to say how many fractions there are between certain limits if we permit infinite

---

1. Stephen Voss has suggested saving the criterion by a weak construal of 'can'. This would require working out.
ordinals to give the answer, there may, for example, be \( \aleph_0 \) of them, but we could not, even in principle, arrive at this answer by counting. It seems to me that the criterion fails for non-material sortals simply because of the obscurity of the notion of 'appropriate space' in cases where we can't take 'space' literally. The reference to 'space' which may have been appropriate with material objects appears here in a context for which it is not appropriate. Feldman tries to amend the criterion thus:

'\( K \)' is a sortal predicate iff \( (\forall r) \) \( (r \text{ is a real space in which there are more than two, but a finite number of things to which } K \text{ truly applies } \rightarrow \text{ you can find out how many } Ks \text{ there are in } r \text{ by counting } Ks) \) is true.  

But 'real space' is no more perspicacious than 'appropriate space'; moreover, failure of antecedent admits just about anything as a sortal - except, e.g., 'chicken that can't be counted'.

The counting criteria considered so far are such that even with obvious sortals there can be problems. For example, 'car' is as good an example of a sortal as we could wish and yet on entering a car-breaker's yard we may not be able to say how many cars are in it, for we should need to know first whether we are to count only those cars which are complete as they

1. Frege fudges the issue in a different way when he rejects 'thing' as a sortal on the grounds that there is no finite number of things. The difficulty here is not that there is no end to counting them but that there is no beginning. In fact there is no definite number (finite or infinite) of things. (Cf. Foundations of Arithmetic, p. 66.)

stand, or those we could reconstruct from the separate parts in the yard, or only those that are in running order. If we choose the first category we need to decide how many bits and pieces may be missing from a car before we consider it incomplete. Is a car with one headlamp missing complete for our purposes or not? If not, what if it just lacks a spare tyre, the maintenance manual or the knob off the glove compartment? If we choose the second we must again decide whether we can reconstruct a car only from the parts which actually constituted the car when it arrived at the yard, or whether we can put together one car using parts which were taken from different cars of the same make, or using parts taken from different cars of different makes (adding Austin steering wheels to Ford steering columns, for example). There are similar and quite well-known problems with other paradigm sortals such as 'man': when does a foetus become a man, and when do Siamese twins cease to be twins and become one person with supernumerary organs? Locke was well aware of the problem and, with his taste for anecdote and curiosities, listed many attested examples to establish the limitations of our knowledge of nominal essences.¹ Consider, for example, trying to classify the beasts of H.G.Well's The Island of Dr. Moreau into species.

Of course, there is nothing to prevent us making the necessary decisions to answer all these questions, and occas-

¹. Essay, Bk. III, Ch. 6, §§26-27 (Fraser, vol. ii, pp. 76-78). It is just this sort of problem with borderline cases which leads Wallace to exclude 'animal' as a sortal (Philosophical Grammar, p. 74). It is surprising that he doesn't see that the same problem exists with almost every general term.
ionally this is done. For example, were a government to pass legislation requiring a census of all cars in breakers' yards - a whim not beyond the scope of bureaucratic fancy - the legislation would have to include a definition of what was to constitute one car for the purposes of the census if not more generally. The point is, however, that these decisions vitiate the first part of Strawson's criterion, and undermine the spirit of the others, for Strawson required that particulars grouped under sortals be countable without antecedent principles of individuation or additional conceptual decisions; that sortals carry around with them, as it were, their own principles for counting. In this way true sortals differ from dummy sortals such as 'thing' for which we have to make further conceptual decisions as to what constitutes one thing. Now to save this part of the criterion we may insist that in fact 'car' does carry around with it all the conceptual elements necessary to make the decisions mentioned above and which are made explicit in the piece of government legislation we supposed enacted. We could insist, that is, that all the materials required for making these decisions (and more) are carried in the baggage of 'car', and that the baggage simply needs unpacking for us to see what materials we have, thence to make our decisions and finally to proceed to our counting. Certainly I think it may be objected against this view, that this is not obviously so!

On the other hand, we could fall back on Wallace's criterion (c), namely, that it makes sense 'to ask someone how many Ks there are in such and such a space'. As it stand, however, this is subject to just the same objections about numbers,
fractions, grains of sand, etc., as the first part of his criterion. Wallace is right that the question makes sense, the only trouble is it can never, in these cases, be answered. If the criterion is weakened further to cope with this problem we will end up with some such version as 'it makes sense to say there are so many Ks'. But this is the criterion already given for count+ nouns and we don't want that.

A more satisfactory solution is to weaken the counting criterion in the way suggested by Sheehan. Sheehan's weak countability criterion is the following:

\([A \text{ necessary condition of } \text{'K's being a sortal is that}] \text{'K' is such that there can be cases in which 'K' provides, without further conceptual decision and without presupposing other principles of individuation, principles adequate for counting Ks.}\)\(^1\)

We need to provide some sort of gloss on the 'without further conceptual decision and without presupposing other principles of individuation' proviso. Whilst it is fairly clear what prior conceptual decisions amount to (which is not to say that it is easy to see why they are relevant - I shall come to that in a moment) 'principles of individuation' might be a bit more obscure. It seems to me that the notion of principles of individuation is just about the most primitive idea on which we can start to build our account of relative identity. In order to be able to count Ks on any occasion one has to know, within broad limits, how much of what there is counts as one K. When a general term supplies at least minimal principles, howsoever

---

1. 'The Relativity of Identity', p. 20; my italics.
vague they may be, which non-arbitrarily give this sort of knowledge then the term may be said to convey principles of individuation. The trouble with this account is that it doesn't make the crucial distinction between when the term itself provides the principles of individuation or when it 'borrows' them from some other term. The idea behind Sheehan's criterion is that sortals should provide their own principles and not borrow them, but the distinction is not altogether clear.

We require the criterion to exclude dummy sortals like 'red thing' despite the fact that in certain circumstances (as when we're given a box of red balls) we can count red things. The point about this case, however, is that 'thing' does not provide the principle of individuation which we utilize in counting the red things in the box - we utilize the principles of individuation provided by 'ball' (which is the assumed gloss we put on 'thing' when we're asked to count the red things in the box). The situation can be compared with that in which we're given a box of red cubes and told to count the red things in the box: we can't because we don't know whether to utilize the principles of individuation appropriate to 'cube' or to 'surface'. This gives the rationale of the restriction against presupposing other principles of individuation. But consider the sortal 'white car', in counting white

---

1. For material object sortals M.J. Woods introduces the helpful idea that principles of individuation for Ks enable one to draw the boundaries of a K in three dimensions. Cf. 'Identity and Individuation', in Butler (ed.), Analytical Philosophy, 2nd series, op. cit., p. 129. See also Perry's notion of 'placing' an object (Identity, p. 84).
cars we plainly use the principles of individuation conveyed by 'car' and thus in a weak sense the term borrows its principles of individuation. Yet can we define a stronger sense of borrowing in which we can still say that 'thing' borrows principles of individuation from 'ball' in our first example? It may seem that because the word 'car' is included in the term 'white car' it is odd to talk of 'white car' borrowing principles from 'car' - rather it just includes those principles. However, the matter isn't quite so straightforward with, for example, 'farmer' where the principles conveyed by 'person' are utilized despite the fact that 'person' is not included in 'farmer'. Even so, it still seems natural to talk of 'farmer' providing principles of individuation, the same as those provided by 'person', rather than borrowing them from 'person'. The problem is this: we need a notion of a term's conveying principles of individuation (rather than borrowing them) wide enough to include an enormous number of count terms but not wide enough to include all of them. The answer it seems to me is the following: a term conveys principles of individuation when there is only one set of principles of individuation which provides the individuative principles associated with the term on every occasion on which the term is literally used. That is, given any literal use of a term in which principles of individuation are associated with it then the term conveys those principles only if the term is associated with the same principles on every literal use. (We must exclude metaphorical uses in which terms conveying principles of individuation might well be associated with radically different principles of individuation - as, for example, when songs are called numbers.)
This is not to say that for any term 'K' which conveys principles of individuation it will be possible to count Ks on all occasions, for principles of individuation may be very vague and not adequate for counting in some (and sometimes, even in most) cases: conveying principles of individuation is different from providing principles adequate for counting. The trouble now is with certain ambiguous terms such as 'diner' which sometimes conveys the principles of individuation associated with 'person' and sometimes those associated with 'railway carriage' and where neither use could properly be called metaphorical. But, in view of the fact that we are classifying terms semantically, what we really have in this case are two different terms (which happen to have the same surface form). On our account a term will be said to borrow principles of individuation if in a certain literal use it is associated with principles of individuation conveyed by a term 'K' and in some other literal use it is associated with principles of individuation conveyed by a distinct term 'J'. Admittedly this is a somewhat strange use of 'borrows' but that term was introduced merely as a metaphor.

In the light of this we can rewrite Sheehan's criterion thus (at the same time proposing that it be taken as a necessary and sufficient condition):

(S1) A term 'K' is a sortal iff there can be cases in which 'K' provides, without further conceptual decision and without borrowing other principles of individuation, principles adequate for counting Ks.

The point of adding the clause against 'further conceptual decisions' is that if we permitted them it would prove possible
to take a term which borrowed principles of individuation and legislate that it in fact conveyed those principles itself.

Sheehan's criterion has certain advantages over the one proposed by Wallace. It has none of the problems with 'number' that Wallace's criterion had. It does not require that I can count how many numbers there are, or even how many numbers there are in a certain 'space', nor that I can say how many fractions there are between 0 and 1. And there are certainly cases in which I can count numbers and fractions; for example, I can count the fractions or numbers involved in stating an arithmetical problem. (Although in certain cases even this limited task may give rise to conceptual problems: for example, I may want to know whether I'm counting type or token occurrences of fractions.) It seems to me that Sheehan's criterion will admit all the terms we normally think of as sortals. It also excludes some terms which we want to exclude: e.g., mass terms and dummy sortals. Admittedly, there are cases in which we can count things, as when, to use Sheehan's example, a furniture removalist asks how many things are to be moved - we know the answer because in this circumstance 'thing' borrows principles of individuation from 'piece of furniture'.

It seems clear that we do have a choice between accepting Sheehan's weak countability criterion or accepting the view that sortals carry in their baggage more conceptual material than we might suppose. Of the two Sheehan's weak criterion is to be preferred because it is simpler than the other method and does not beg so many questions about meaning specification, definition and open texture; it does not presuppose a philosophical position on these issues.
Sheehan presented his weak countability criterion as a necessary condition for sortalhood, but in (S1) we have turned it into both a necessary and a sufficient condition. How strong are Sheehan's objections to treating it as a sufficient condition? Sheehan objects that if it were so treated it would admit as a sortal 'official' in the sense in which to be the same official is just to hold the same office. Let us call this sense 'official*'. 'Official*' clearly passes the weak countability criterion but why does Sheehan think it is not a sortal? The answer lies in the preliminary gloss he puts on 'sortal' in which for 'K' to be a sortal implies that 'K' could act as covering concept for an identity statement. There are a number of terms of this type: e.g., 'landmark' in the sense in which to be the same landmark is nothing more than to mark conspicuously the same position; 'church' in the sense in which to be the same church is nothing more than to be a place of worship for the same congregation; 'milkman' in the sense in which to be the same milkman is simply to have the same milkround; and many others. Wiggins urges that 'a is the same official* as b' is paraphraseable as 'a holds the same office as b' (and similarly with the other terms), which is not an identity statement and, therefore, neither is the original. But, as I shall argue in detail later, Wiggins' argument is not only invalid as it


3. See below, ¶11.3.
stands but every attempt to reconstitute it into a valid argument seems to employ principles which are either implausible or undermine Wiggins' own theory of identity. If 'a' and 'b' are the names of official*s then there seems to be every reason to regard 'a is the same official* as b' as an identity statement - even on Wiggins' terms. These issues I shall discuss later on. At the moment I am insufficiently persuaded of the validity of this line of thought to reject 'official*' as a sortal. And in lieu of further evidence of non-sortals admitted by (Sl) I shall treat it as an adequate criterion of sortalhood.

3.4 The Structure of Sorts. Sortals are a type of general noun, that is, they are entirely linguistic things. To each sortal, however, corresponds a class, or sort, which is non-linguistic. The members of the sort form the extension of the sortal. The sort which corresponds to the sortal 'S' may thus be defined as {x : S(x)}, and I shall say that {x : S(x)} is the sort named by 'S'. If an item a is a member of the sort named by 'S' then a will be said, following Frege, to fall under

---

1. Sheehan's subsequent attempt to exclude 'official*' is also, it seems to me, open to decisive objections. It is, for example, a criterion for the use of a term as a sortal in an identity statement. Other sortal uses of terms are left undetermined. I have already argued that we should have a classification of terms as sortals or non-sortals, rather than of uses of terms as sortal or non-sortal uses. Moreover, Sheehan's criterion relies upon a paraphrase procedure which would make it very difficult, if not impossible, to say of a particular use of a term in covering concept position whether it was a sortal use or not. Cf. Sheehan, 'The Relativity of Identity', p. 21.
A singular term 'a' will be said to refer under a sortal 'S' iff either (i) 'a' is a proper name of which 'S' gives the sense; or (ii) 'a' is a definite description of the form 'the S' or 'the S which...'; or (iii) 'a' is an ostensive expression containing a demonstrative together with 'S' (e.g., 'that S'). Thus 'the man who broke the bank at Monte Carlo' refers under 'man', whilst the man who broke the bank at Monte Carlo falls under 'man', 'human being', 'animal' and 'gambler'. Where sortal subscripts are added to individual constants (e.g., 'a_S') it is thereby made explicit that the referring expression 'a_S' refers under 'S'. When sortal subscripts are added to individual variables (e.g., 'x_S') it indicates that the variable takes values from the range of items falling under 'S'.

Now one of the most obvious things about sorts which this brings out is that one individual falls under many sortals. Moreover, of the many sorts into which an individual might fall some will include others and some will only intersect with others. For example, the sort named by 'man' is included in that named by 'animal', the one named by 'gambler' in that named by 'human being'. But, if we suppose that the man who broke the bank at Monte Carlo was a clergyman, the sort named by 'gambler' only intersects with that named by 'clergyman'. It is desirable to make these relationships precise and introduce some terminology with which we can express the relationships between sorts. The terminology chosen will be familiar.

1. We assume that God does not play dice.
from its somewhat different use in the traditional logic of
terms. A sortal 'S' will be said to be superordinate to a
sortal 'T' iff \((\forall x)(T(x) \rightarrow S(x)) \land \neg(\forall x)(S(x) \rightarrow T(x))\). A
sortal 'S' will be said to be subordinate to a sortal 'T' iff
'T' is superordinate to 'S'. Two sortals, 'S' and 'T', will be
said to be co-ordinate iff \((\forall x)(S(x) \leftrightarrow T(x))\). We could, of
course, give a purely extensional account of these expressions
in terms of material implication rather than entailment but
this would not capture the sense we want. Moreover, it would
lead to problems with unexemplified sortals (e.g., 'winged
horse') which would, on an extensionalist account, be sub-
ordinate to every sortal. For similar reasons we need to use
entailment rather than strict implication: strict implication
would ensure that any necessarily unexemplified sortal (e.g.,
'round square') was subordinate to every sortal. We have:
\(\neg(\exists x)(S(x)) \Rightarrow (\forall x)(\forall t)(S(x) \supset t(x))\) and thus \(\neg(\exists x)(S(x)) \Rightarrow
(\forall x)(\forall t)(S(x) \supset t(x))\) and, since (converse Barcan formula)
\(\neg(\forall x)(\forall t)(S(x) \supset t(x)) \Rightarrow (\forall x)(\forall t)(S(x) \supset t(x))\), we obtain
\(\neg(\exists x)(S(x)) \Rightarrow (\forall x)(\forall t)(S(x) \supset t(x))\).

---


2. 'Winged horse' is certainly a sortal by (S1), for we can
count the number of winged horses in the legend of
Bellerophon.

3. Cf. Leslie Stevenson, 'Extensional and Intensional Logic
for Sortal-Relative Identity', (unpublished draft, n.d.),
pp. 5, 16. In the last line '¬' is to be interpreted as
strict implication.
and implausible to exclude necessarily unexemplified sortals, and since the converse Barcan formula can be proved within the weakest system of quantified modal logic (LPC + T), the 'paradox' is not easy to avoid within the framework of a strict implication system. One way of so avoiding the paradox would be to interpret the quantifiers as ranging over non-existent and necessarily non-existent items as well as over entities. In fact it will prove desirable to adopt both the Routley-Goddard interpretation of the quantifiers and entailment in formulating a theory of relative identity. Systems of entailment are sufficiently widely accepted to need no further justification, whilst Geach's slogan 'No identity without entity' is surely just wrong as far as the use of identity relations in natural language is concerned. We clearly need to be able to quantify over items we might wish to assert an identity relation between.

It will be useful to have some symbolism to express the claim that two sortals are co-ordinate. Thus we give the following definition:

\[(3.3) \quad S \equiv T =_{df} (\forall x)(S(x) \leftrightarrow T(x))\]

Two sortals 'S' and 'T' will be said to intersect iff 
\[(\exists x)(S(x) \& T(x)); \text{ or:}\]


\[ (3.4) \quad S \mid T =_{df} (\exists x) (S(x) \land T(x)). \]

But (3.4) ignores one complication, for a butcher may be a baker in one of two ways: a single man might simultaneously be both a butcher and a baker, or a single man might change his profession and become a baker after ceasing to be a butcher. Certain sortals, e.g., 'boy' and 'man', are necessarily related in this second way. Whether or not we wish to call such a relation 'intersection', it seems desirable to define a broader relation which captures this:

\[ (3.5) \quad S \mid_T T =_{df} (\exists t, t') (\exists x) [R_t(S(x)) \land R_{t'}(T(x))]. \]

which leaves it open whether a single individual is simultaneously or successively an S and a T. Given this distinction (3.4) could be represented:

\[ (3.6) \quad S \mid T =_{df} (\exists t) (\exists x) [R_t(S(x)) \land R_t(T(x))]. \]

A sortal 'S' will be said to restrict a sortal 'T' iff 'S' is subordinate to or co-ordinate with 'T'; or:

\[ (3.7) \quad S \subseteq T =_{df} (\forall x) (S(x) \rightarrow T(x)). \]

We can also define the notion more widely so that it is not restricted to sortals: A general term 'K' restricts a general term 'J' iff \((\forall x) (K(x) \rightarrow J(x))\). Similar extensions of the notions of superordination, subordination, co-ordination and intersection could also be defined. In our present sense of 'restricts' in the limit case every general term restricts itself (allowing this will be useful later). It will also be useful to define a sense of 'restricts' in which this is...
excluded. A sortal 'S' will be said to restrict a more general sortal 'T' iff 'S' is subordinate to 'T'. A sortal 'S' will be said to be ultimate iff there is no sortal superordinate to 'S'. Any sortal subordinate to an ultimate sortal will be said to be a restriction sortal. Given any sortal 'S', then an ultimate sortal which 'S' restricts will be designated 'US' in the notation I'm proposing. We define 'u(S)', intuitively '"S" is ultimate':

\[(3.8) \quad u(S) = df \quad (\forall t)(S \subseteq t \supset S \neq t).\]

Finally, a sortal 'S' will be called a phase sortal iff it is a temporal restriction of some more general sortal. Thus 'boy' is a phase sortal restricting 'man'.1

---

CHAPTER FOUR

CRITERIA OF IDENTITY

4.1 The Concept of Identity Criteria. Criteria of identity are often appealed to but little discussed.\(^1\) Geach characterizes the notion as that 'in accordance with which we thus judge as to ... identity'\(^2\) and this will do initially. There is, however, a difficulty here: It is not clear whether we should take the criteria of identity for an identity claim to be a set of conditions satisfaction of which logically guarantees the truth of the identity claim and failure of which logically guarantees its falsity; or as a set of conditions satisfaction of which constitutes good evidence for the truth of the claim and failure of which constitutes good evidence for its falsity. The difference can be illustrated by an example: that two cars should have the same registration number constitutes good

---

1. The expression 'criterion of identity' goes back to Frege's Grundlagen (or, at least, to Wittgenstein's Philosophical Investigations). The matter isn't quite simple because Frege's phrase 'Kennzeichen für die Gleichheit' and Wittgenstein's 'Kriterium der Identität' were both translated (by Austin and Anscombe, respectively) as 'criterion of identity'. (Cf. Austin's translation of the Grundlagen, p. 73 and Anscombe's translation of the Investigations, Part I, §253.) Dummett in his article on Frege in The Encyclopedia of Philosophy, edited by Paul Edwards (New York: Macmillans, 1967), vol. iii, p. 229, claimed that Frege's account of a criterion of identity was a 'cornerstone of Wittgenstein's whole later philosophy.' In his Frege (pp. 580-581) he is much less sweeping.

2. Reference and Generality, p. 39. (The force of the 'thus' is not made clearer by Geach's context.)
evidence that they are the same car, but does not logically guarantee it; whereas the fact that they are spatio-temporally continuous (given certain conditions) is not merely good evidence for the identity but actually constitutes it. The term 'criterion', at least since Wittgenstein popularized it, does not give much assistance in deciding which way to take 'criteria of identity', and both ways (not to mention others) have been accepted in the literature: Geach, Perry and Wiggins take it that criteria of identity logically constitute the identity; Strawson uses the term in a way that implies that criteria of identity provide good evidence only. I shall follow Geach, Perry and Wiggins mainly because if we don't take the criteria as providing logically necessary and sufficient conditions it is not clear how we are to take them. There is an additional reason in that one of the intuitions behind relative identity theories is that identities of different types are differently constituted.


2. Geach, 'Ontological Relativity and Relative Identity', p. 2; Perry, Identity, pp. 8-10; Wiggins, Identity and Spatio-Temporal Continuity, p. 43. Shoemaker also takes it this way: see his helpful account in Self-Knowledge and Self-Identity, (Ithaca: Cornell University Press, 1963), pp. 3-5.

3. Individuals, pp. 31-34.
It is clear that if identity criteria are to be relevant at all to relative identity then they are more than mere Wittgensteinian symptoms.

But in accepting this strong account of what identity criteria are we have to reject another claim which appears tempting: the claim that when we in fact judge as to identity we must use identity criteria. Clearly we do, on a large number of occasions, judge merely by symptoms of identity or distinctness. We do, on frequent occasions, judge as to whether two cars are identical by whether they have the same number plate rather than by judging whether they are spatio-temporally continuous. Another claim we must reject (but for independent reasons) is that identity criteria enable us to assign a truth-value to any identity claim. In this identity criteria do not differ from any other type of criteria. We have, for example, perfectly good criteria for the application of the term 'brother', but we do not know whether this term is applicable to Plato. That we do not simply indicates our ignorance, not the inadequacy of our criteria for brotherhood. Clearly this view of what criteria can do is untenable however we cash 'criterion' out.

Different criteria of identity are associated with different general terms. There is nothing in this which conflicts with absolute identity,¹ which is as well for the

---

¹. Cf., for example, Terence Penelhum, 'Hume on Personal Identity' Philosophical Review, vol. 64, 1955, p. 581. Wiggins, Perry, Herbst and Dummett all accept some version of (LL) but wish to supplement it with an account of identity criteria.
classical theory since the point seems incontrovertible. We can see this if we consider how we would go about deciding whether two plays were written about the same character, or had the same author, whether two cars were the same colour, whether two books had the same title or were on the same topic, or whether two calculations gave the same number. It is not just that the symptoms of identity are different in each case, but that the identity is differently constituted. Nor can we include each case under some umbrella account such as (LL) for even if (LL) could be truly applied in each case (which it manifestly cannot) it would not be criterial for the identity (that is, it would not permit us to judge as to the truth or falsity of the identity claim).

Some authors have gone further and suggested that criteria of identity form part of the meaning of general terms, along with criteria of application. This view seems altogether plausible but I do not need it for my purposes here. In any case, it presupposes a position on the meaning of general terms which there is no need to work out here. Appeals such as 'We wouldn't say that he knew what the word "river" meant if he didn't know what it was to be the same river again,' are based on intuitive principles the validity of which is not entirely obvious. Moreover, this way of construing the role of identity criteria may be thought to give rise to some difficulties as

1. For example, Dummett, Frege, p. 73; M.J. Woods, 'Identity and Individuation', p. 121.

2. Dummett. Frege, p. 73.
when Dummett discovers two senses of 'book': the sense in which we can use two books to prop a table up and the sense in which an author may have written two books. Identity criteria are different between token books and type books but it is not altogether certain that the word 'book' is ambiguous on that account. It is a good thing not to assume more than we have to, and for our purposes here it will suffice that identity criteria are associated with certain terms rather than constitute part of their meaning. Two questions now arise which I shall attempt to answer in the remainder of this chapter. Firstly, which general terms convey identity criteria? Such dummy sortals as 'thing' and 'entity', for example, do not, for even if we can give necessary and sufficient conditions for thing- and entity-identity these very general conditions will not be criterial. At least, the conditions commonly given are not criterial and I see little hope of establishing conditions which are. Secondly, under what conditions, if any, do two distinct terms convey the same identity criteria?

4.2 Sortals and Criteria of Identity. Since sortals, by definition, satisfy the weak countability criterion it follows that they must have criteria of identity associated with them. For if the items falling under a particular general term can, on some occasions, be counted it follows that on some occasions we know what it is to be the same item of that sort again.

1. Ibid., p. 74.
Counting presupposes identity, for we must have principles which protect us from counting the same one twice. (On the other hand, as I shall argue in §4.4, identity criteria are not sufficient for counting.)

The identity criteria associated with a sortal 'S' tell us what it is for a and b to be the same S. This account is both perfectly general for sortal-relative identity and also reasonably intelligible. It might help, however, to have the notion fleshed out a bit with some specific principles and with some particular examples. The difficulty here is that both the principles and the examples are likely to be contentious and I don't want anything I say about identity criteria in general to depend upon a particular view of, say, personal identity or the role of spatio-temporal continuity. The examples I use will be examples only and may be replaced by others which agree with alternative (and possibly better) philosophical intuitions. My aim is not to advocate a particular theory of the identity of material objects, or persons, or psychological states or anything else, but merely to present a general theory of identity with which most of the various alternative accounts of these issues are compatible.

The identity criteria conveyed by a sortal are best regarded as a bundle of principles (hence: 'criteria' rather than 'criterion'). One such principle must clearly be relational. If the concept of S-identity can be analysed and if a and b are the same S it follows that there is some relation, apart from 'i; =s n', which they satisfy. Even within the framework of absolute identity theory quite a lot of work has been done formulating such relational principles for different categories.
of items. For example, for material bodies the relation of spatio-temporal continuity is often proposed; for persons sameness of memory; for universals similarity; for what Strawson calls 'private particulars'¹ (for example, thoughts and sensations) exact similarity and sameness of person (on a Strawsonian account); and so on. In some cases we see that we may analyse S-identity in terms of some other sortal identity (sensation-identity in terms of person-identity, for example) but this will then be subject to a further analysis (in terms of memory-identity, say) and so on. In each case there is a basic relational condition constitutive of S-identity for a given sortal 'S', though this does not exhaust the identity criteria conveyed by 'S'. Let us express this two-place relation thus \( R_S(\xi, \eta) \) so that we have:

\[
(4.1) \quad a =_S b \Rightarrow R_S(a, b).
\]

If we add to this the requirement that \( a \) and \( b \) both fall under 'S' we get a principle which in some cases (e.g., colour-identity construed in terms of similarity) exhausts the identity criteria associated with a sortal. Using 'yellow' in its sortal sense (in which a paint chart might have three yellows on it) we can say of two patches of colour that they are the same yellow iff they are both yellow and they are both similar in respect of colour. In other cases problems still crop up. Sometimes we still lack a sufficient condition for S-identity; sometimes we may have a sufficient condition but one which is still not criterial. As an example of the first type, given that \( a \) and

¹ Individuals, p. 41.
b are both men and are both spatio-temporally continuous it does not follow that they are the same man - for they might be Siamese twins. A way of coping with this difficulty would be to stiffen our analysis of spatio-temporal continuity so that mere contiguity at some point was no longer sufficient but that (say) contiguity of each place occupied by a with some place occupied by b (and vice-versa) was required. On a materialist view of men, there seems little doubt that we could make such an account (given enough subtlety) give both necessary and sufficient conditions for being the same man. Such conditions would not, however, be criterial for we would not be able to judge whether two objects were spatio-temporally continuous. A solution to the first type of problem thus leaves the second type untouched, and it is the second type that we are mainly concerned with here. The additional principles we need to make the relation criterial are provided by locating the objects in question under a sortal. The sortal provides two sets of principles - one for space and one for time - which serve to pick out the object from its environment. Principles of individuation serve this purpose as far as space is concerned and have already been discussed in our account of sortals. Principles of persistence do an exactly analogous job with regard to time: they express what constitutes the coming into being and passing away of the sort of object in question, and determine what changes may or may not befall it in the meantime. It is


only when we can thus isolate an individual S both spatially
and temporally from its environment that we can judge whether
it is spatio-temporally continuous with some S and therefore
that they are the same S.

Of course, not every part of this analysis fits every
case. There are some items which are not spatial, and some which
are not temporal and some which are neither. We have already
used 'principles of individuation' in an extended sense which
covers non-spatial items and there is no need for an analogously
extended use of 'principles of persistence'. Numbers, for
example, may be regarded as being individuated by the successor-
of relation: no number is its own successor. There are even
some cases in which we can supply identity criteria though the
(non-sortal) general term in question conveys no principles of
individuation. In such cases we have to make clear (usually
fairly stipulatively) what is to count as one such K for the
particular case in hand. Cases of this sort will be considered
in §4.4. All sortals however convey principles of individuation
and those under which temporal items fall convey principles of
persistence. Where such principles apply they should be included
among the criteria of K-identity together with the basic relational
condition and the requirement that both items fall under 'K'.

1. The general account of identity criteria just given owes a
great deal to Wiggins' account in Identity and Spatio-Temporal
Continuity, pp. 34-36; and to Perry's in Identity, pp. 84-90,
105-114, although I use 'criterion of identity' differently
from Perry (cf. Identity, p. 107).
There are a number of sortal terms in natural language for which the criteria of identity are hard to state, vague or subject to confusion. Certain sortals have very indeterminate criteria of identity, e.g., 'wave', 'cloud' and 'theme'. It is, in general, difficult to judge when we have the same wave, cloud or theme but this is not to say that it is never possible nor that there is anything necessarily wrong with a sortal which conveys vague criteria of identity. In other cases, the vagueness extends in one direction only, as in a number of technical terms (e.g., 'virus') for which identity criteria are quite clear for the most part but, in certain cases, exceedingly difficult.\(^1\) Other examples of this sort are what Wiggins terms 'porous sortals', typically names of types of animals where it is left open whether, for porous sortal 'S', animals which are S form a separate species or simply a stage in the life histories of animals in some other species.\(^2\) Such porous sortals have indeterminate persistence conditions. Other terms may be more difficult in that they appear to have two sets of identity criteria which need not always coincide. A famous example is 'person' for which requirements of spatio-temporal continuity and possession of a common memory seem equally appropriate but need not always be satisfied by the same individuals. In this case a more pressing worry is that the concept is not a unitary concept at all but two distinct, though related, concepts.\(^3\) Less

\(^1\) For remarks along these lines see M.J. Woods, 'Identity and Individuation', pp. 121-122.

\(^2\) Identity and Spatio-Temporal Continuity, pp. 59-60, fn. 37 (p. 69).

\(^3\) Cf. Wiggins' remarks on 'person' (ibid., pp. 43-44).
controversial examples of these 'dual' concepts are 'official' (with the distinct sense of 'official*'), 'landmark', 'church', and 'milkman' which were noted in ¶3.3; and, of course, Dummett's two senses of 'book' mentioned in ¶4.1.

If all sortals convey identity criteria, is it ever the case that two distinct sortals convey the same identity criteria? And, if so, under what conditions do they do so? Philosophers have generally agreed that some sortals do convey the same identity criteria as others but have usually disagreed on the conditions such sortals must satisfy. So far as I know the following conditions exhaust those that have been proposed:

Two sortals convey the same criteria of identity

(i) when one restricts the other;¹

(ii) when both restrict a common sortal;²

---

1. This seems to be Geach's view. Cf. Reference and Generality, pp. 50, 152-153: Any term which conveys identity criteria 'either is itself a term "K" that can be related in the way described to a proper name "a" [i.e., in such a way as to give the sense of "a"], or is derived from such a term "K" by ... restriction.' (p. 50) The quotation does not entail (i), however.

(iii) when one is an ultimate sortal of which the other is a restriction.¹

Since all sortals restrict themselves (iii) entails (ii); and so does (i). Thus if we can establish either (i) or (iii) we will have established (ii).

Before we consider (i)-(iii) it will be desirable to have some notation for criteria of identity. For a sortal 'S' let the two-place relation 'Cs(ξ,η)' represent the identity criteria it conveys. Thus we have

\[(4.2) \quad Cs(a,b) \equiv a =_S b\]

and, additionally, the requirement that \(Cs(a,b)\) be criterial for \(a =_S b\). Of course, 'Cs(ξ,η)' should not be confused with the relation 'Rs(ξ,η)' for we have \(Rs(ξ,η) \subseteq Cs(ξ,η)\) but not vice-versa. Now consider (i) and assume two sortals 'S' and 'T' such that \(S \subseteq T\). One way of establishing (i) would be to adopt the principle that, if \(S \subseteq T\)

\[(4.3) \quad a =_S b \to a =_T b\]

I shall argue in §6.3 that (4.3) is, in fact, false but for the moment let us assume that it is correct since it looks as if

¹ Leslie Stevenson, 'A Formal Theory of Sortal Quantification', Notre Dame Journal of Formal Logic, (forthcoming), p. iv (page references are to the typescript): 'An ultimate sortal may be said to give the criterion of identity given by all sortals subordinate to it, the criterion of identity of every individual to which that sortal applies.' Wiggins 'surmises' that his 'highest genuine sortal' 'may possibly be nothing other than a concept which is ultimate' (Identity and Spatio-Temporal Continuity, p. 62). But note that Wiggins' notion of an ultimate sortal is wider than our own (cf. ibid., p. 32).
it might appeal to Geach who comes nearest to espousing (i),\(^1\) and, in any case, it looks plausible and seems to give an argument for (i). It is with this argument alone that I want to deal here. The argument runs as follows: If \(C_S(a,b)\) holds then, by (4.2), so does \(a =_S b\) and hence, by (4.3), so does \(a =_T b\). Thus what is criterial for \(S\)-identity is criterial for \(T\)-identity. But this last move doesn't follow, for if \(C_S(a,b)\) failed then so would \(a =_S b\) but this would tell us nothing about \(a =_T b\). In other words, in the case envisaged, the identity criteria of '\(S\)' are criterial sufficient conditions for \(T\)-identity but not criterial necessary conditions.\(^2\) So \(C_S(\xi,\eta)\) is not identical with \(C_T(\xi,\eta)\), but rather \(C_S(\xi,\eta) \subseteq C_T(\xi,\eta)\). And from this we can show that two sortals have the same criteria of identity when they are co-ordinate. In this case we have:

(4.4) \[ a =_S b \iff a =_T b \]

and thus \(C_S(a,b)\) would provide necessary as well as sufficient criteria for \(a =_T b\). Although this manner of proving that co-ordinate sortals carry the same identity criteria depends

---

1. Geach, 'A Reply', p. 556. (In fact, I'm pretty sure it is not the principle Geach has in mind, but that must wait until §6.3.)

2. If, instead of (4.2) we had:

\[ a =_S b \Rightarrow a =_T b \]

the argument would not even get this far, for whilst \(C_S(a,b)\) would still be a sufficient condition for \(a =_T b\) it would certainly not be a criterial sufficient condition.
upon the false premiss (4.3) the conclusion can scarcely be doubted. If \( S \approx T \), (4.4) is true since no two \( S \)s could be a single \( T \) or vice-versa. And to prove our claim all we need is (4.4) rather than (4.3).

We have said very little about the nature of ultimate sortals and until we do do (in Chapter Five) it will be difficult to see what plausible arguments might be mounted in favour of (iii). However, in dealing with (ii) it is possible to find objections which will hold against (iii) as well. Let us suppose that there is some sortal which '\( S \)' and '\( T \)' both restrict. Then we can define a relation '\( R(\gamma, \delta) \)' over sorts (where '\( \gamma \)' and '\( \delta \)' are place-holders for sortal terms) such that:

\[
(4.5) \quad R(S, T) = \text{df} \quad (\exists \upsilon)(S \subseteq \upsilon \land T \subseteq \upsilon)
\]

intuitively, the relation '\( \gamma \) restricts the same sortal as \( \delta \)'. Now if '\( R(\gamma, \delta) \)' is an equivalence relation it will turn out that there is only one sortal which '\( S \)' and '\( T \)' both restrict.\(^1\) Thus all sortals which '\( S \)' and '\( T \)' both restrict will have the same criteria of identity for there will be only one such sortal. But this will only give the result that '\( S \)' and '\( T \)' have the same criteria of identity, if it is the case that two sortals share criteria of identity if one restricts the other.

Let '\( \upsilon \)' be the sortal which '\( S \)' and '\( T \)' both restrict. Then we can prove nothing about the identity criteria of '\( S \)' and '\( T \)' unless we assume that \( c_S(\xi, \eta) = c_\upsilon(\xi, \eta) \) and \( c_T(\xi, \eta) = c_\upsilon(\xi, \eta) \).

---

\(^1\) The question of whether '\( R(\gamma, \delta) \)' is an equivalence relation will be discussed in Chapter Five where it will be argued that it is not since it fails transitivity.
Given that, $C_S(\xi, \eta) = C_T(\xi, \eta)$ is obvious, but there seems to be no way of proving what is wanted without that assumption - an assumption we have already argued is false.

I see no other way to justify the second answer except by this appeal to the first. Moreover, the approach does seem intuitively implausible. Suppose 'S' and 'T' have the same identity criteria then it follows, given $S(a) \& S(b) \& T(a) \& T(b)$, that:

$$(4.5) \quad a =_S b \equiv a =_T b$$

which would rule out any case of (R) occurring within a sortal hierarchy. But there do seem to be cases of (R) which satisfy these conditions. For example, the poet C.Day Lewis wrote detective novels under the name of Nicholas Blake. Now clearly, C.Day Lewis is the same man as Nicholas Blake whilst they are not the same writer (though both are writers) despite the fact that 'man' and 'writer' both restrict 'person'.

Moreover, this second position will run into the difficulties which Brody has pointed out in connection with Locke's theory of identity. According to (ii) for $S$s which are $V$s $C_S(\xi, \eta)$ holds iff $C_V(\xi, \eta)$ does. But there seems to be no a priori guarantee that this will be so. Moreover, there is little reason for supposing that what is criterial for $V$-identity is also criterial for $S$-identity and $T$-identity. These last three objections also apply to (iii).

A number of the issues adverted to here will be discussed further in Chapter Five. But, at least until those who believe otherwise provide some better arguments, the conclusion that only co-ordinate sortals have identical criteria of identity seems to be in tact.
4.3 Mass Terms and Criteria of Identity. It is clear that as far as identity criteria are concerned mass terms are very different from sortals. In the first place, they don't divide their reference and thus provide no principles of individuation for those items that fall under them. It is, of course, true that a mass term such as 'gold' does serve to distinguish gold from those parts of its environment which are not gold, but it fails to distinguish one thing which is gold from another. Mass terms can 'individuate' one type of stuff from another but 'type of stuff' is, as we shall see, a sortal and it is this sortal rather than the mass term 'gold' which isolates the type of stuff which is gold from other types of stuff. Certainly a mass term marks no distinctions within a type of stuff, though this can be done by sortals which are derived from the mass term by a method to be described in this section.

The same is true of principles of persistence. There is a sense in which we can talk of what constitutes the coming into being or passing away of snow (namely, the freezing of water and the melting of snow) but it is the sense conveyed by the sortal 'type of stuff' rather than that conveyed by 'snow' itself. Principles of persistence associated with mass terms have to do with the transmutation of one type of stuff into another. In other cases, as when we might say that music is created by being composed, the principles are those conveyed by 'piece of music' not 'music' itself. In the sense of 'exist' appropriate to 'music' (as distinct from that appropriate to 'piece of music') it seems to me that music cannot be said to have been brought into existence by human activity. If we
shrink from this then it seems inevitable that the persistence criteria we have in mind are those conveyed by 'piece of music'.

It seems that mass terms do not convey principles of individuation or of persistence. In cases where we find such principles attached to a mass term they turn out, in fact, to be borrowed (in the sense of §3.3) from some associated sortal. When we turn to the relational component of identity criteria we find a similar situation. When we talk of the same music there seems to be no one relation which is at stake: is it the same performance or the same piece of music, for example? Similarly with 'the same metal': the same type of metal or the same piece of metal? Even 'the same sugar' seems a prey to this fundamental difficulty: the same spoonful, or the same packet? We cannot judge until we know. As Quine says:

A mass term like 'water' or 'sugar' does not primarily admit 'same' or 'an'. When it is subjected to such particles, some special individuating standard is understood from the circumstances. Typically, 'same sugar' might allude to sameness of shipment.¹

Given our account of identity criteria it seems fair to conclude that mass terms do not convey them.

But now we seem to have a problem for at least one of the (D)-theses of §1.4, namely (D₄) which limited completing concepts to terms conveying identity criteria. Mass terms lack identity criteria and yet may appear as covering concepts in relative identity statements. We thus have covering concepts

¹ Quine, review of Reference and Generality, Philosophical Review, vol. 73, 1964, p. 102.
in natural language which are not completing concepts in a
$(D_n)$-relative identity theory. However, there is a technique
which turns mass terms into sortals, or occasionally dummy
sortals, when they occur in contexts of the form:

\[(4.6) \quad a \text{ is the same } M \text{ as } b\]

or

\[(4.7) \quad a =_M b\]

Consider the following sentences of this form:

\[(4.8) \quad \text{This snow is the same snow as that snow.}\]

\[(4.9) \quad \text{The gold that now composes this earring is the same gold as the gold which lay in an irregularly shaped lump on the artist's table a month ago.}\]

\[(4.10) \quad \text{The trash that Alfred keeps throwing over his back fence and finding again in his yard is the same trash as the trash that Bertrand keeps throwing over his back fence and finding again in his yard.}\]

Our task is to reformulate these sentences in such a way as to meet the requirements of $(D_n)$ without changing their sense.

Now in the case of (4.8)-(4.10) we clearly can judge as to the identity asserted in each statement and thus criteria of identity must be coming from somewhere but they can't be coming from the covering concept because that (as it stands) conveys no criteria of identity. If $(D_n)$ is to have any plausibility at all mass terms, when used as covering concepts, must be functioning as disguised sortals, or as some other type of term which does

---

1. These examples are from Tyler Burge, 'Truth and Mass Terms', *Journal of Philosophy*, vol. 69, 1972, p. 273.
convey identity criteria. In fact, every mass term covering concept can be replaced by either a sortal or a dummy sortal.

On the theory I advocate what (4.8) amounts to is an assertion that this snow is the same lump (ball, heap or block) of snow as that snow. Unless we understand that in (4.8) the second use of 'snow' is to be read in this way the sentence provides us with no criteria by which we can judge it.1 Similar considerations apply to (4.9) which asserts that the gold which now constitutes this earring is the same piece of gold as the gold which a month ago was an irregularly shaped lump on the artist's table. Whilst 'lump of snow', 'heap of snow', etc. and 'piece of gold' are sortals, (4.10) differs from (4.8) and (4.9) in that a dummy sortal (and not a sortal) is required to preserve intended sense. (4.10) asserts that it is the same collection of bits of trash that circulates between Alfred's garden and Bertrand's. There are no cases in which we can count collections of bits of trash without further conceptual decisions for any two collections of bits of trash can be summed to form just one collection2 and thus we need to decide before we start counting just how we are going to allocate the bits of trash into countable collections. I shall leave until §4.4 the question of whether identity statements with such dummy sortals as covering concepts meet the requirements of (D4).


2. This does not make 'collection of bits of trash' a mass term for it is clearly count.
My theory is not new and, in fact, has some distinguished precursors. Strawson, for example, writes:

The general question of the criteria of distinctness and identity of individual instances of snow or gold cannot be raised or, if raised, be satisfactorily answered. We have to wait until we know whether we are talking of veins, pieces or quantities of gold or of falls, drifts or expanses of snow.

There are, in fact, a whole range of what might be termed 'sortalizing auxiliary nouns', hereafter to be called 'sans', (such as 'vein', 'piece', 'heap', 'volume', 'expanse', 'kind', 'type', 'area', 'lump', etc.) whose main (and possibly in some cases, whose only) purpose is to operate with a mass term and convert it into a sortal or dummy sortal. It is perhaps better to talk of a noun's having a use as a sortalizing auxiliary noun than to talk of sortalizing auxiliary nouns for

1. P.F.Strawson, 'Particular and General', Proceedings of the Aristotelian Society, vol. 54, 1953/54, p. 242; also Individuals, pp. 202-209. Quinton goes further and says that such considerations 'always' apply when mass terms are used to refer (cf. The Nature of Things, [London: Routledge and Kegan Paul, 1972], p. 46). I am not concerned to defend this stronger thesis which anyway seems open to counter-examples of the type noted by Quine (e.g., 'Gold is a chemical element.') where a mass term is used apparently as a singular term. On the weaker version, see also Geach, Reference and Generality, p. 44.

2. Vendler notes these constructions but uses the term 'measure nouns' for what I've called sortalizing auxiliary nouns. (Cf. Z.Vendler, Linguistics in Philosophy, [Ithaca: Cornell University Press, 1967], p. 40n.) This term is as inappropriate as mine is cumbersome. Stephen Voss has also recognized these usages and has coined the happier term 'parcel words' with a Lockeian derivation. S.H.Voss, 'The Meaning of "is"', (Unpublished A.N.U. Seminar Paper, 1973).
many nouns have more than the one use. In what follows I shall take it that a noun, 'A', has a use as a sortalizing auxiliary noun iff there is a phrase of the form 'A of M' which is count+ where 'M' is a mass term.¹ In the theory which I take Strawson and Quine to be suggesting and which I am supporting in any statement, S, of the form (4.6) for which there are identity criteria the san is understood and suppressed. If this is the case then it must be possible to re-write S to include a san in such a way as to preserve the intended sense of S.

This theory has been the subject of powerful attacks and I now want to consider these. Burge² objects to Strawson’s treatment by construing Strawson’s point in two ways: the first true but uninteresting; the second interesting but false. He claims that Strawson is saying either (i) that we are barred by grammar from asking or answering questions of the form

(4.11) Is a a single M?

or (ii) that we have no grammatical sentences which express identity or distinctness of instances of snow and gold, except

---

1. It is interesting to note that the same sort of constructions are permissible with pluralized sortals: e.g., 'herd of cows', 'packet of peas', 'parcel of toys', etc., but not with singular sortals - further evidence for Laycock's thesis (mentioned in §2.4) that pluralized sortals are mass terms. Since plural sortals can cover identity statements (e.g., 'These are the same cows as we saw last week') and since plural sortals do not convey identity criteria they should be treated in the same way as mass term covering concepts (e.g., 'This is the same collection of cows as we saw last week').

2. 'Truth and Mass Terms', pp. 272-274.
those which employ sortalizing auxiliary nouns before the mass term, and if we did we would have no understanding of the conditions under which they would be true. The first claim, Burge argues, is, of course, unexceptionable but need not be taken to show that mass terms do not divide their reference. I expect that much is true, though we might reply that it would be odd to have a term 'M' which did divide its reference but for which we couldn't ask or answer questions of the form (4.11). However, it is clear that Strawson is making a stronger point than (i).

In reply to interpretation (ii) Burge argues that there are grammatically well-formed sentences expressing identity or distinctness of snow and gold which don't involve a sortalizing auxiliary. He lists (4.8)-(4.10) as examples. Again we have to grant him that these are, indeed, well-formed sentences of English. He further argues that (a) we understand them, and (b) we can confirm or disconfirm them as easily as we can 'This star is the same star as that star' in which only sortals are involved. Again, this can scarcely be denied, but it nonetheless misses the essential point which is that in confirming or disconfirming them we require criteria of identity according to which we can make our judgement. The fact that it isn't difficult to confirm or disconfirm such statements is neither here nor there: it does not show that we can obtain identity criteria for snow, gold and trash without employing sortals. Indeed, if Strawson's theory is correct, the fact that we can so easily verify or falsify (4.8)-(4.10) indicates no more than the extreme naturalness with which we sortalize the mass terms allegedly acting as (D,)-completing concepts.
Burge gives the game away on the next page where he says:

Ordinary usage seems to resist one's counting the objects which a mass term is true of. Yet we can quantify over these objects ... and express identity and difference between them.¹

Given identity and quantification we should be able to count snows by the following device:

\[(\exists x^1) \ldots (\exists x^n) [\text{snow}(x^1) \land \ldots \land \text{snow}(x^n) \land x^1 \neq x^2 \land \ldots \land x^{n-1} \neq x^n \land (\forall y) (\text{snow}(y) \land y = x^1 \lor \ldots \lor y = x^n)]\]

However, it is clear, as Burge admits, that with this we would not be counting snows but things that are snow. But we still haven't got criteria of identity because 'thing that is snow' no more provides them than does 'snow'. What we need is a sortal as covering concept.

Further objections to the theory are raised by Helen Cartwright.¹ Firstly, she argues, in many cases more than one sortal will be applicable. In such cases which will be chosen? For example, in (4.8) such sorts as 'block', 'piece', 'volume', 'lump', 'ton', 'ball of five feet diameter' etc. could all act as an appropriate sortalizer for 'snow'. But I fail to see why having this choice should embarrass a follower of Quine and Strawson. After all, as far as I can see, adoption of any of the above sorts would give the same answer to the question: 'Is

1. Ibid., p. 274.

this snow the same as that?' It is not as though each different san is going to give a different answer to that question, and in many cases even the method of finding the answer will remain the same. Where the method is different we will choose according to the techniques we have available and what we're interested in. In other words, the choice will be pragmatically determined. As we might expect similar things happen with counting, as J.M.E. Moravcsik notes. We understand 'The King is counting his gold' because we know which term provides the principles of identity and distinctness according to which the King individuates his gold. That is, we know he is counting his pieces of gold rather than his ounces of gold. In such cases the correct san can be discovered from the circumstances. On the other hand, if the choice of san is going to make a difference to the answer we get, then there is all the more reason for putting the san in, for without the san our question will be ambiguous and (if we are prudent) we will refrain from answering it until the intended sortalization is given. The possibility that conflicting criteria of identity might be involved lies at the very core of the motivation for introducing sans explicitly. Clearly, if for every mass term there was one and only one sortalization we may as well keep the mass term as completing concept with the proviso that the criteria of identity are those of its sortalization.

Cartwright claims to go on to make this first point in 'another way':

[S]uppose that the [snow] in question is melted - so that there no longer is a set of [blocks] or lumps; or ... that the water Mary wiped up might have been spilled. A puddle of water is not the sort of thing which can be spilled; and what can be spilled - say, a glass of water - is not the sort of thing one can wipe up.¹

But this isn't the same point at all. In such cases we do not have an embarrassing choice of sans, but rather the context rules out so many of them that we have difficulty in finding one which would be appropriate. Her two examples require different treatments and must be taken in turn. Suppose the snow we started with melts, we cannot therefore say:

(4.8a) This snow is the same block of snow as that snow.

because now 'that snow' does not refer to snow: there being no snow for it to refer to. Nor could we say:

(4.8b) This snow is the same block of snow as that water.

for 'block of snow' does not refer to an expanse of water. All this has nothing to do with the difficulty or ease of choosing an appropriate san, the difficulty here is to find one. We want to say that in an important sense the snow before it melted and the water afterwards are the same, but we want to know 'the same what?' An obvious answer would be: the same collection of H₂O molecules, so that we'd have:

(4.8c) This snow is the same collection of H₂O molecules as that water.

¹. 'Heraclitus and the Bath Water', p. 476. (The quotation is amended to fit our example rather than Cartwright's.)
I fail to see what problems (4.8c) poses. Cartwright's second example poses similar problems for our analysis. Suppose Mary spills a glass of water and then wipes up the puddle of water which resulted. We would want to hold:

(4.13) The water Mary spilled is the same water as the water Mary wiped up.

But which san could we use? Clearly, 'glass of water' will not do (because Mary couldn't wipe up a glass of water) nor will 'puddle of water' (because Mary couldn't spill a puddle of water). But this does not leave us entirely bereft of resources: we could use 'collection of water molecules' or 'volume of water.'

Cartwright's alternative way of putting her first criticism is, in fact, the same as her second criticism which is: 'there might be circumstances in which no [san] of the required kind is applicable.' ¹ Essentially we have already dealt with this criticism, but Cartwright introduces a new problem by considering chemical as well as physical changes. Suppose we dissolve some metal in an acid and later reclaim it. In a solution molecules of metal become dissociated and when later the metal is reclaimed from the acid the atoms re-associate in a different way - thus, not even the molecules of the metal which was dissolved are the same as those which are reclaimed. However, I'm not sure that we would want to say that it was the same metal throughout ² for saying that implies that a

¹. Ibid., p. 476.

². Although it is, of course, the same type of metal, which is one way of sortalizing 'metal', though the question here is one of sameness of quantity of metal.
quantity of metal can suffer a spatio-temporal discontinuity and still remain the same quantity of metal, for clearly if we are to accept Cartwright's treatment, during the solution's existence there was no metal and afterwards the same metal as before sprang back into existence. It seems to me that a quantity of metal is not the kind of thing that can come into being twice and lapse from existence in between.

Nonetheless there is clearly something which is the same before, during and after the dissolution but what this something is seems to me to be not metal but a collection of atoms. Anyone who claimed that the same metal was reclaimed could, I think, be beaten back to the position that what he meant was that the collection of atoms remained the same. Thus it appears as if 'collection of atoms' has by proxy rights to act for 'metal' as a completing concept. But this is mistaken. There can be occasions on which a is the same collection of atoms as b, but a is not the same metal as b, though both are metals. (For example, if a is a metal which, by some chemical process, can be transformed into a different type of metal by just a rearrangement of atoms.) Thus if we permitted the transformation:

\[
\text{metal} + \text{collection of atoms}
\]

(where 'metal' occurs in covering concept position) we would not preserve intended sense and truth-value. Moreover, we would go beyond the transformation I propose, which is:

\[(4.14) \quad M + \underline{san} + of + M\]

where 'M' occurs in covering concept position. It may be claimed
that I have already gone beyond (4.14) in dealing with the case of the water Mary spilled where I permitted 'collection of water molecules' as a sortalization of 'water'. But 'collection of water molecules' differs not at all from 'collection of molecules of water' which fits (4.14) since 'collection of molecules' is a composite san.

In dealing with cases of chemical change like those just considered (and also with even more radical nuclear changes) it might be claimed that in the notion of a Lesniewskian sum we had a covering concept aptly suited for completing such identities. This is not so, for 'Lesniewskian sum' is a dummy sortal which like 'thing' does not convey by itself identity criteria. Thus it is useless for (D₁)-type completions. In addition it suffers all the problems just discussed in connection with 'collection of atoms'.

Alternatively, it might be held that in any case where a sortalized mass term was needed to cover an identity statement 'quantity of M' was at hand to provide the requisite completion. Cartwright seems to reject all, or at least many, in favour of 'quantity'.¹ There are limits to its use: for example, 'quantity of hunger', or 'quantity of music' give rise to some uneasiness. However, it could still be urged that 'quantity' is more widely applicable than any of its brothers. A further qualification must be introduced for we could, in ordinary language, say of two distinct lumps of gold that they were the same quantity of gold. The difficulty can be resolved by

Russell's distinction between a quantity and a magnitude: 'When two quantities are equal, they have the same magnitude.' However, all possibility of confusion on this issue could be avoided, without loss of generality, by the use of Locke's term 'parcel' instead of Russell's 'quantity'. However, as Burge has rightly pointed out, 'quantity of gold' and 'parcel of gold' are not sortals and we can no more count parcels (or quantities) of gold than we can count things. However, we would be entitled to replace 'parcel of gold' as covering concept by 'collection of molecules of gold' and, more generally, 'parcel of M' by 'collection of parts of M'. Neither of these substituted phrases is a sortal but, as we shall see in §4.4, the first does convey identity criteria whilst the second may do if we can replace 'parts of M' by a pluralized sortal.


2. Locke, Essay, Bk. II, Ch. 27, §2 (Fraser, vol. i, p. 441).


4. It is significant that Chappell, who also favours the Lockean terminology, lists criteria which distinguish 'parcel of M' from sortals. These criteria are those which have been (in some cases mistakenly) used to distinguish mass terms from sortals. (Cf. V.C.Chappell, 'Stuff and Things', pp. 71-73.

5. 'Amount of M' would require some alternative reading, though it is difficult to suggest one which is foolproof. Consideration of this issue would take us into the curiously unexplored area of quantitative identity. Fortunately, we are here only concerned with parcels.

6. Cartwright's reasons for preferring 'quantity' to other sans are briefly discussed in Appendix 2.
It is, as Cartwright says\textsuperscript{1}, a contingent matter which \textit{san} will operate in a given context, and therefore we may not be quite certain that there will always be an \textit{san} whenever we need one. Of course, there will not be an appropriate \textit{san} to complete any putative identity claim. If we say that the mustard Mary spilled was identical with the water she wiped up and then search for a covering concept we won't find one. But this isn't terribly disturbing because we do not want to licence all identity claims.

Thirdly, Cartwright argues that, from the fact that we may have many appropriate \textit{sans} to choose from, we will (depending upon which we choose) get different truth-values for any identity statements taking a mass term as covering concept.

Some water or sugar might, in various circumstances, fail to be the same water or sugar - that there is no way of telling, apart from a particular context, whether some water or sugar is or is not to be counted the same.\textsuperscript{2}

This is, of course, exactly what the (D\textsubscript{4})-relativist is claiming: we have to have a completing concept before we can assess an identity statement, and our assessment will depend upon which completing concept we choose. Thus anyone who takes this talk about completing concepts seriously will say that this problem is exactly the reason for doing so.\textsuperscript{3}

\textsuperscript{1} 'Heraclitus and the Bath Water', p. 477.
\textsuperscript{2} Ibid. We have already mentioned this as a special case of her first argument.
\textsuperscript{3} Cp. the use Geach makes of this point in arguing for (R), 'Identity', pp. 9-10. He uses the same example as Cartwright.
However, as Cartwright goes on to admit with her examples, this problem (if it exists) is not peculiar to mass terms but infects sortals as well. 'Word' is a sortal and yet, as Cartwright notes, is subject to just the same ambiguity.\(^1\) Words can be ambiguous: for example, we have both 'objéct' and 'objet' which 'have little more in common than their spelling.'\(^2\) Is 'objéct' the same word as 'objet' or not? In other words, do we take whether a is the same word as b to be determined morphemically or phonemically?\(^3\) Presumably Cartwright would not doubt that 'word' can function as a covering concept despite this ambiguity,\(^4\) if so the ambiguity would give no argument for excluding similarly ambiguous sortalized mass terms.

However, the ambiguity of 'word' is not quite parallel to the sort of ambiguity Cartwright was trying to get at in her original objection, namely that 'snow' in (4.8) is ambiguous before it is sortalized. Two points that I made in reply to her first criticism are relevant here. (i) We may hope that the context in which (4.8) is uttered will help us unambiguously to decide which san to use (i.e., which gives the intended sense of the utterance). (ii) If (i) fails to narrow the choice down to

---

1. 'Heraclitus and the Bath Water', p. 478.
2. Ibid., p. 471.
3. The relativist here claims another example of (R): 'objéct' is the same collection of morphemes as 'objet', but not the same collection of phonemes. Cf. Geach, 'Identity', pp.9-10.
4. Other sortals such as 'theist' (believer in theism, or tea addict) exhibit similar ambiguities which are easier to spot and therefore less confusing.
one san we may hope that all those left in by (i) will result in our giving the same truth-value to (4.8). To these two points we may add: (iii) If (i) leaves in more than one applicable san and if some of those that are left in result in the assignment of different truth-values to (4.8), then this shows no more than the inadequacy of using the mass term 'snow' as a completing concept in (4.8) - which is the very point I was arguing for. In this case we have to list the possible san-transformations of 'snow' and in doing this we are doing no more than making explicit the ambiguities of (4.8) as it stands. Moreover, if we are to be able to judge (4.8) true or false we have to do just this. For Cartwright to claim that 'apart from a particular context' we have no way of knowing which san to choose concedes exactly the point I'm trying to make. Given a context we may hope that the san is uniquely determined; or, if it is not, that the choice doesn't make a difference to judgements of the identity (cases (i) and (ii) above). Apart from a context which settled the matter we can only hope to judge the identity if the san is explicit (case (iii)). (It is also possible that even with a context the choice of san is neither uniquely determined nor indifferent as far as the judgement is concerned - a case Cartwright doesn't consider - in this case also it is essential to make the san explicit.)

Cartwright seems half to recognize this for she suggests uses of mass terms with 'same' in which, as she puts it, 'there is ... something suspicious in the use of the word "same"':

1. 'Heraclitus and the Bath Water', p. 478.
People should get the same pay for the same work.¹

He showed some intelligence on that occasion (he did not show the same intelligence today).

When the drug wears off you may have some pain (the same pain Mrs Jones had after her operation).

Let us hear some opinion on the subject (the same opinion that was heard last night).

From where I sit, I can see some blue (can you see the same blue?).

If there is something suspicious about the use of 'same' with these mass terms it is because in these cases we obviously wouldn't know which criteria of identity.² My point is that the inadequacy of the mass terms as completing concepts (which is obvious in some of these statements) is present, but less obvious, in all statements in which mass terms are supposed to act as completing concepts. Thus we must get rid of mass terms in covering concept position and this leads to the introduction of the san technique.

1. It may not be quite obvious why 'same work' is odd. Cartwright gives the reason: 'If people are to get equal pay for equal work, it may be that time is to be taken into account; but it may be that the same work can be done by one man in less time than by another. The same work may have to be equally hard; but it might also be the case that the same work can be done by one man with greater ease than by another. It may be that the accomplishment must be the same; but it is also possible for someone to do the same work and accomplish less.' (Ibid., pp. 477-478.)

2. In some cases Cartwright's suspicion seems somewhat unjustified. In the case of 'same intelligence', for example, it seems clear that 'degree of intelligence' is the required sortalization.
How come, then, if sortals can also be ambiguous, we don't have to get rid of sortals as covering concepts? The answer to this last-ditch stand is that we do have to get rid of the ambiguous sortals as covering concepts, but we do not have to get rid of all sortals as covering concepts since not all sortals are ambiguous as to identity criteria. Suppose 'S' is an ambiguous sortal. Then we must expose the ambiguity by listing the different dictionary entries for 'S'. For example, we cannot assign a truth-value to:

(4.15) François-Marie Arouet is the same theist as Voltaire.

if we are in doubt as to whether 'theist' means 'believer in theism' or 'tea addict'. However, we can list the two alternative readings of (4.15) and assign the value true to the first ('believer in theism') and false to the second ('tea addict').

Perhaps it is worthwhile summing up the points so far made in this argument. Firstly, Cartwright claims that there may be an abundance of sans and we won't be able to choose between them. In reply I would argue that either the choice of one particular san rather than another makes a difference or it does not. If it does, they our choice may be made for us by the context; if it does not then the choice is indifferent. Secondly, Cartwright argues that there may be cases where it is not possible to find an san at all. I can't prove that there will not be such cases but I think it highly unlikely that there will be when we are in genuine need of a completing concept. Thirdly, Cartwright argues that there is no way of telling (in some cases) whether some water is or is not the same water. This,
it seems to me, concedes exactly the point I want. It is not possible on some occasions to judge whether this is the same water as that because we need to know whether we are considering tubfuls, glassfuls, pools, oceans or drops of water before we can decide questions like these - at least in some cases.

Finally, Cartwright has an argument which she considers 'perhaps most important'.¹ She urges that the question whether what is some water is the same water is logically prior to the question as to whether it is the same tubful of water or aggregate of water molecules.² I'm far from clear what she means by a 'logically prior question' but I suspect that at least part of what it would imply would be either that if X is a logically prior question to Y then it is impossible to ask Y without asking, or having previously asked, X (but not vice-versa); or that it is impossible to answer Y without answering, or having previously answered, X (but not vice-versa). If this is what she means, then I think she is mistaken. I can see no reason for assuming that in order to ask (a) 'Is this the same pool of water as that?' one has to ask (before or simultaneously) (β) 'Is this the same water as that?', let alone that to be able to answer the first question one must have already answered the second. It seems to me that, most usually, (α) will be just one of the glosses that may be put on the radically ambiguous (β). If this is the case then (α) will

---

1. 'Heraclitus and the Bath Water', p. 479.
2. Ibid.
surely be logically prior (in the sense of 'logically prior' I've suggested) to (β), rather than vice-versa. On the other hand, it may be just that, in context, (α) is the only gloss to put on (β). In such a case to ask (α) is simply being more explicit than to ask (β). In such circumstances neither question is logically prior to the other. Another difficulty which might be cleared up by an explication of 'logically prior' is that Cartwright needs to show that from the fact that (β) is logically prior to (α) it follows that mass terms convey adequate criteria of identity.

4.4 Dummy Sortals and Criteria of Identity. The story so far is that whilst sortals convey identity criteria mass terms do not. However, mass term covering concepts can be removed, by means of (4.14), in favour of either a sortal or, sometimes, a dummy sortal. Cases where (4.14) yeilds sortals give no cause for alarm to the (D₄)-relativist, but his uneasiness is greater over cases where dummy sortals result. The problem is twofold: in the first place, there are cases in which we really do need dummy sortals such as 'collection of molecules' as covering concepts (e.g., the water Mary spilled/wiped up case). Moreover, we will need such covering concepts quite apart from the sortalization of mass terms issue: we need to be able to talk of things being, for example, the same collection of planks or bits. On the other hand, it is clear that not all dummy sortals convey criteria of identity. 'Thing', 'entity', 'item', 'individual', 'space-occupier', etc. are all totally devoid of identity criteria. Can we draw a distinction between dummy sortals which do convey identity criteria and those which do not?
In the case of 'collection of molecules' it is perfectly possible to define criteria of identity which are genuinely criterial, namely:

\[(4.16) \quad a \text{ is the same collection of molecules as } b \equiv (\forall x: \text{molecule}(x))(x \in a \equiv x \in b)\]

which corresponds to the standard definition of set identity. But for most of the contexts in which we shall need such completing concepts (4.16) is too strong. A weaker, and more useful, account would be:

\[(4.17) \quad a \text{ is the same collection of molecules as } b \equiv (\exists x: \text{molecule}(x))(x \in a \equiv x \in b)\]

where 'M' is the quantifier 'Most'. We have thus a strict and a weak sense of 'ξ is the same collection of molecules as η'. In practice the strict sense will be of little use. Clearly we can define identity criteria for other dummy sortals (e.g., 'collection of planks', 'collection of atoms', 'collection of molecules of water' and so on) in exactly the same way. We can, moreover, adapt (4.16) and (4.17) to give strict and weak senses for 'ξ is the same parcel of matter as η'.

But, it will be objected, if we are allowed to define identity criteria for collections of molecules there is nothing to stop us doing the same for mass terms by means of:

\[(4.18) \quad a \text{ is the same M as } b \equiv (\forall x: M(x))(x \in a \equiv x \in b)\]

1. We use 'collection' rather than 'set' because we shall use formulae like (4.16) and (4.17) most frequently in contexts such as (4.13) and it is not clear that sets of molecules are the sort of things that can be wiped up and spilled. Collections of molecules, in the sense in which I use the term, are.
where '$\bigcirc$' is Goodman's overlapping operator; defining identity criteria for such dummy sortals as 'thing' by (LL):

\[(4.19) \quad a \text{ is the same thing as } b \equiv (\forall \phi)(\phi(a) \equiv \phi(b))\]

and for 'set' by the standard set-theoretic account:

\[(4.20) \quad a \text{ is the same set as } b \equiv (\forall x)(x \in a \equiv x \in b).\]

There seems no limit to what might be accomplished by such methods.

In fact, however, (4.18), (4.19) and (4.20) are not identity criteria at all, even if we admit that all three are true (i.e., that the right-hand side provides necessary and sufficient conditions for the type of identity appearing on the left). The reason is similar in each case. In the case of (4.18) we can't judge whether the left-hand side is true by running through the individuals which are $M$ and seeing whether they overlap $a$ or $b$ - for we have no way of knowing what an individual that is $M$ is. Similarly, with (4.20); and, of course, the case of (4.19) has already been dealt with at sufficient length in §1.2. On the other hand, the conditions expressed in (4.16) and (4.17) are criterial for we can (at least in principle, under ideal conditions) judge whether the left-hand side is true by running through molecules to see whether they are members of $a$ or $b$ (once we have decided what we are going to count as collection $a$ and collection $b$). And, of course, the reason we can do this is that 'molecule' (like 'atom', and 'plank' and 'molecule of water' - my other examples) is a sortal.
In those cases in which dummy sortals convey criteria of identity they are commonly of the form 'collection of $S$s' where '$S$' is a sortal. In some cases 'collection' doesn't appear; in diverse and improbable circumstances 'set', 'amalgam', 'concourse', 'crowd', 'aggregate', etc. may take its place. If we represent all these usages by 'Coll($S$)' we may define general identity criteria for crowds and collections of $S$s thus:

\[(4.21) \quad \text{a is the same Coll($S$) as } b \equiv (\forall x_S)(x_S \in a \equiv x_S \in b)\]
or, more loosely:

\[(4.22) \quad \text{a is the same Coll($S$) as } b \equiv (\exists x_S)(x_S \in a \equiv x_S \in b)\]

Here the subscripted '$S$' which appears in the quantifiers acts as a range-restrictor on the quantifier, indicating that the variable ranges only over the sort named by '$S$'. It is clear that if we are to express relative identity in a formal theory we will need a many-sorted theory of quantification, for standard quantification theory, which requires the values of bound variables to be the same or different absolutely, is, as Quine has pointed out, closely linked to absolute identity.

---

1. Cases in which we have (e.g.) 'parcel of gold' may, as I've suggested, be properly replaced by 'Coll(gold molecule)'.


(4.21) and (4.22) not only present necessary and sufficient conditions for being the same Coll(S) - in the strong and weak senses respectively - but are genuinely criterial. We see, however, that sortals remain the prime bearers of identity criteria. The identity criteria conveyed by non-sortal terms are always parasitic upon criteria conveyed by sortals.

§4.5 Substantival Terms. Geach uses the expression 'substantival term' for general nouns which convey criteria of identity but he would not accept the account just given as to which nouns convey criteria of identity. According to Geach both sortals and mass terms (but not dummy sortals) convey identity criteria and he justifies this in the following passage:

Countability is a sufficient condition for our considering as substantival a term in respect of which we can count things; and this is so because we (logically) cannot count Ks unless we know whether the K we are now counting is the same K as we counted before. But it is not necessary, in order that 'the same K' shall make sense, for the question 'How many Ks?' to make sense; we can speak of the same gold as being first a statue and then a great number of coins, but 'How many golds?' does not make sense; thus 'gold' is a substantival term, though we cannot use it for counting.

(Footnote 3 of p. 117, continued)
many-sorted theories of sortal quantification see J.R. Wallace, Philosophical Grammar and 'Sortal Predicates and Quantification'; N.D. Belnap, 'Conditional Assertion and Restricted Quantification', Nous, vol. 4, 1970, pp. 1-12; and (most importantly) Leslie Stevenson, 'A Formal Theory of Sortal Quantification'. See also Chapter Nine below.

I'm at a loss to know what Geach would take to constitute a necessary and sufficient condition for a term's being a substantival term. Clearly it cannot be the well-formedness of 'the same K' (where 'K' is the term in question) for that would admit 'thing' and Geach specifically wants to exclude 'thing'. The distinction seems to rest upon Geach's intuitions about whether 'a is the same K as b' makes sense, but of what these intuitions might be he gives us no account.

Wiggins also uses the concept, but somewhat differently. He treats substantival terms as a proper subset of sortal terms, and, whilst he apparently thinks of any sortal as conveying criteria of identity, he seems to think that those non-substantival sortals which are subordinate to a substantival sortal (as all of them, he implies, are) derive their criteria of identity from (or share them with) the substantival sortal

1. Ibid., p. 145. Although he does admit a special use of 'thing': 'meaning roughly "piece of matter that moves around with its own proper motion and all together", so that ... a watch ... would be a "thing", but an undetached part [of a watch] would not count as a distinct "thing"'. (Ibid.) Quite how we would specify identity criteria for this term I don't know, but possibly in terms of spatio-temporal continuity with various stiffening conditions.

2. Identity and Spatio-Temporal Continuity, p. 7. (Wiggins uses the term 'substance-concept' (p. 7) or 'substance-sortal' (p. 30) rather than 'substantival term' but the intent is plainly the same.)

3. He permits any sortal to act as a completing concept (cf. ibid., pp. 1-2 and passim) and his theory of (D)-relative identity clearly requires completing concepts to convey identity criteria. (See below, Chapter Seven.)

4. Ibid., p. 54.
to which they are subordinate.\(^1\) If this is, in fact, his position it seems reasonable to identify substantival terms with ultimate sortals when we consider his views on when two terms convey the same criteria of identity and on the structure of the sortal hierarchy.\(^2\) On the other hand, he gives the following necessary condition for being a substantival term:

\[
\text{If } S \text{ is a substance-concept for } a, \text{ then } a \text{ is } S \text{ throughout the time in which there is such a thing as } a; \text{ and (because } S \text{ or some equivalent sortal gives the sense of } a's \text{ proper name) the proposition that } a \text{ is not } S \text{ is self-contradictory.}\(^3\)
\]

This suggests that substantival terms are what John Woods has called 'essential kind predicates'.\(^4\) This interpretation is also supported by Wiggins' remark that substantival terms 'give the privileged and ... the most fundamental kind of answer to the question "what is x?"'.\(^5\) The dilemma would be neatly solved if Wiggins held that all and only ultimate sortals were essential kind terms. However, he defines an ultimate sortal as 'a sortal which either itself restricts no other sortal or else has a sense which both yeilds necessary and

---

1. Again the point is implied rather than stated. (In fact, Wiggins, rather surprisingly, rarely refers explicitly to criteria of identity.) But see his remarks, ibid., pp. 28ff.

2. On the former see above §4.2; on the latter see below Chapter Five.


sufficient conditions of persistence for the kind it defines and is such that this sense can be clearly fixed and fully explained without reference to any other sortal which it restricts.¹ And this (if for no other reason than sheer opacity) leaves the question of their coextensionality open.

Since the best established theory of (D)-relative identity is one which requires substantival terms (viz., terms which convey criteria of identity) as completing concepts they will be much referred to below. My use has the same intension as Geach's and Wiggins' but its extension will include (as indicated above) all sortals and some dummy sortals. It will be useful to have some notation for such an important group of terms and I will use the upper case letters 'F', 'G' and 'H' as substantival term constants and the lower case letters 'f', 'g' and 'h' as substantival term variables. It is important to note that the definitions of §3.4 on the structure of sorts can be taken over mutatus mutandis as applying to substantival terms and their inter-relations.

This is a good place to tie up a few loose ends before moving on. What (Dω), which limits completing concepts to general nouns conveying criteria of identity, amounts to is a restriction of completing concepts to substantival terms. The criteria of identity conveyed by substantival dummy sortals are in fact parasitic upon those conveyed by sortals. From the point of view of identity criteria, identity statements with such dummy sortals as covering concepts may be regarded as being

¹. Ibid., p. 32.
broken up into a group of identity statements with sortals as covering concepts. We, as it were, build up the dummy sortal's identity criteria from the identity criteria of sortals. Thus Wiggins' insight that sortals play a fundamental role in judging any identity claim is preserved.

On the other hand, it is too restrictive to limit completing concepts to sortals alone for that would exclude (4.8c) and many other relative identity statements which we certainly require if our theory of relative identity is to be adequate to natural language. Thus we may rule out (D2). This defect in (D2) could be remedied if (D3), which permits both sortals and mass terms as completing concepts, were admissible; for then we could avoid (4.8c) in favour of:

(4.23) This snow is the same matter as that water.

But if we take the philosophical motivation for introducing relative identity seriously (namely, to achieve a theory of identity which is not just formally adequate but which mirrors the way in which we use and make identity judgements) we may not permit ourselves mass terms as completing concepts. Thus we may rule out (D3). Of the remaining (D)-theses, (D1), which permits any general noun as completing concept, is the version which fits the actual syntax of natural language best. There is no general noun 'K' such that 'a is the same K as b' is syntactically deviant in English (where 'a' and 'b' are replaced by singular terms).\(^1\) Thus any general noun is acceptable as a

---

1. Pluralized general nouns are permitted as covering concepts in English. We should note, however, that on such occasions we require 'a are the same K as b' rather than 'a is the same K as b'. Otherwise I think this generalization stands.
covering concept in English. But the notion of a completing concept is a bit grander than that of a covering concept, and it is difficult to see what sort of incompleteness the use of certain general nouns could be removing when they are employed as covering concepts. It is certainly not the kind of incompleteness which has motivated relative identity theorists or which will help us in any way to achieve our aim of a theory which does justice to the way we actually think about identity. (It is, in fact, a rather uninteresting kind of incompleteness which will be considered - and dismissed - in 46.1.) That leaves just (D₄) and (D₅), which limits completing concepts to ultimate sortals. To (D₅) we turn in the next chapter.
CHAPTER FIVE

ULTIMATE SORTALS

§5.1 Introduction. The notion of an ultimate sortal is a very important one. We have a version of \((D), (D_\delta)\), which restricts completing concepts to ultimate sortals and the question will arise as to whether we can have examples of \((R)\) if completing concepts are restricted in this way. The questions to be answered here will make that question relatively easy. The main argument which follows is concerned with two principles which may be stated as follows:

(I) The Restriction Principle: If an individual \(a\) falls under two distinct sortals \('S'\) and \('S_1'\) in the course of its history then there is at least one sortal which \('S'\) and \('S_1'\) both restrict.

(II) The Uniqueness Principle: If an individual \(a\) falls under two distinct sortals \('S'\) and \('S_1'\) in the course of its history then there is only one ultimate sortal which \('S'\) and \('S_1'\) both restrict.

With the formalism introduced in §3.4 we can formalize both principles: the Restriction Principle as

\[
(5.1) \quad S \vdash^\tau S_1 \Rightarrow (\exists t) (S \subseteq t \& S_1 \subseteq t)
\]

or as:

\[
(5.1a) \quad S \vdash^\tau S_1 \Rightarrow R(S,S_1)
\]

where \('R(S,S_1)'\) is as in (4.5); and the Uniqueness Principle as:
If the Restriction Principle and the Uniqueness Principle are both true then there can be no case of (R) with ultimate sortals acting as covering concepts for both conjuncts. It will be as well to spell out the relations between these two principles and ultimate sortals in a little detail. Let us suppose the Restriction Principle true, and let 'T' be a sortal which 'S' and 'S₁' both restrict. Now either 'T' restricts only itself or it restricts some other sortal as well. If 'T' restricts only itself then 'T' is an ultimate sortal. If 'T' restricts some further sortal as well then either that sortal restricts only itself (in which case it is ultimate) or it restricts some other sortal as well, in which case...

In view of the fact that all the classificatory hierarchies in natural language can have only a finite number of levels we are eventually going to arrive at a sortal which restricts only itself and is therefore ultimate. Because of the transitivity of 'y restricts δ', the Restriction Principle entails that there is at least one ultimate sortal which 'S' and 'S₁' both restrict. The Uniqueness Principle entails, in addition, that there is only one such ultimate sortal, that of all the sortals which 'S' and 'S₁' both restrict only one will be ultimate.

Wiggins accepts both the Restriction Principle and the Uniqueness Principle and seeks to validate them by an argument of great length and astonishing complexity.¹ This is supported

¹. Ibid., pp. 30-34.
and amplified by one of comparable complexity from Shoemaker. Fortunately, the two arguments are parallel in strategy. Both fall into two parts: the first an argument (in Wiggins' case the trace of an argument) for the Restriction Principle; the second an argument to the Uniqueness Principle on the basis of the Restriction Principle. The second part of the argument is largely concerned with proving that 'γ restricts the same sortal as δ', the relation 'R(γ,δ)' of §4.2, is an equivalence relation. I shall argue that neither Wiggins' nor Shoemaker's argument is valid, that 'R(γ,δ)' is not an equivalence relation, and that there is no reason to suppose that either principle is true nor, indeed, that either has even pre-theoretical plausibility. But before moving on to that part of my enterprise I want to show that Wiggins' argument is a little surprising in the context in which it occurs.

Wiggins supposes the truth of the principle:

\[(5.3) \quad (\forall x)(\forall t)[\text{exists}(x,t) \rightarrow (\exists \delta)(\delta(x,t))]\]

That is, for every item x and for every instant of x's existence there is some sortal under which x falls at that instant, or, as Wiggins puts it, 'everything is something or other.'

Now Wiggins claims to be arguing from (5.3) to the conclusion:

2. Identity and Spatio-Temporal Continuity, p. 29.
3. Ibid, pp. 29-30, 34.
(5.4) \((\forall x)(\exists s)(\forall t)[\exists (x,t) \supset s(x,t)]\)

which is stronger than (5.3). But what he in fact argues for is the conclusion:

(5.5) \((\forall x)(\exists s)(\forall t)[(\exists (x,t) \supset s(x,t)) \&
\quad (\forall t)(t(x,t) \supset s \neq t)]\)

which is stronger still. He urges, for example, that 'what remains to be disproved is the possibility that a should coincide with b under \(S\), b with c under \(S_1\), c under \(S_2\) with d ...

... where \(S, S_1, S_2\) ... are not related by being qualifications of some one sortal.'

Now (5.4) does not, as I shall show, require either the Restriction Principle or the Uniqueness Principle, whereas (5.5) requires them both.

It is important to see why there are very real penalties for Wiggins if (5.4) is not met, and that there are no real penalties for him if (5.5) fails. Wiggins is a \((D)\)-relativist who holds that every genuine identity statement can be covered by a sortal, that is, a \((D_2)\)-relativist. If we have a case in which one individual successively falls under a series of sortals '\(S\)', '\(S_1\)', etc. and there is no sortal under which it falls throughout its career then we have, on \((D_2)\)-relativist

---

1. I am sceptical of Wiggins' restricting the claim that items must fall under some sortal to items which exist. If we pursue Wiggins' line of thought about the connection between sortals and individuation then surely every individuable item must fall under some sortal. (Cf. Identity and Spatio-Temporal Continuity, p. 27 for further remarks on this issue.)

2. Ibid., p. 30; my italics.
principles, no grounds for saying that the same individual falls successively under 'S', 'S₁', etc. for we have no sortal completing concept for that individual throughout its career. Thus the \((D_2)\)-relativist needs (5.4). What he doesn't need, however, is the stronger claim that Wiggins argues for, namely that 'S', 'S₁', etc. must restrict one and only one sortal under which the individual falls throughout its career. For Wiggins completely ignores the possibility that the sortal under which the individual falls throughout its career may only intersect with 'S', 'S₁', etc. and assumes that in order for an individual to fall continuously under a single sortal and successively under a number of sortals, the latter must all restrict the former. But this assumption needs arguing for.

Without actually providing him with an argument, Wiggins' terminology clearly leads him towards the stronger assumption. Wiggins refers to the sortals 'S', 'S₁', etc. under which an individual successively falls as 'phase-sortals' and, as he remarks, 'all phase-sortals are of their very nature ... restrictions of underlying more general sortals'\(^1\) which he calls 'substance-sortals'.\(^2\) Now clearly, if he assumes that 'S', 'S₁', etc. are phase sortals the Restriction Principle is, though not proven, at least made plausible, for we would know then that 'S' restricted some sortal and that 'S₁' did, and so on, and we would also know that there must be some sortal to satisfy the requirement (5.4) of \((D_2)\). We would still not have, what

---

1. Ibid., p. 30.
2. Ibid., p. 7.
the Restriction Principle requires, that 'S', 'S_1', etc. restrict the same sortal and that that sortal satisfies (5.4). Nonetheless, we can see Wiggins' appeal to phase sortals as a persuasive move in support of the Restriction Principle. However, even this move must be disallowed because on the present definition of 'phase sortal' there is no guarantee that each member of a series of sortals under which an individual finds itself is a phase sortal. For example, a car might successively find itself under the sortals 'white car' and 'red car' neither of which is, on the definition of 73.4, a phase sortal. On the other hand, if we widen the definition of phase sortal to let in these terms there seems no reason to suppose that each member of such a series of sortals is a restriction of some more general sortal. For example, a twig may, in appropriate circumstances, become a work of art (viz., an objet trouvé) without there being any sortal which 'twig' restricts nor any sortal which 'work of art' restricts. To secure the fact that it is one individual which is first the twig and then the work of art it is sufficient to ensure that 'twig' and 'work of art' intersect over this particular twig. 1

1. It might be objected that Wiggins' notion of an ultimate sortal differs from my own. However, Wiggins' definition, (ibid., p. 32 and quoted above pp. 120-121) includes my own as its first disjunct. It will not therefore exclude any of the examples on which my own case rests.
5.2 The Restriction Principle. Although Wiggins' talk about phase sortals and restriction sortals was congenial to the Restriction Principle, Wiggins never regarded it as a proof of the Principle. Indeed, Wiggins argues so sketchily for the Principle that one wonders whether he thinks it needs arguing for at all. The most substantial parts of the argument below are due to Shoemaker, although the context in which they occur is due to Wiggins. Wiggins imagines a circumstance in which an individual goes through a succession of stages a, b, c, d, each characterized by different sortals, 'S', 'S₁' and 'S₂' so that we have:

(5.6) \[ a = S b \land b = S₁ c \land c = S₂ d \]

Now Wiggins seeks to prove that 'S', 'S₁' and 'S₂' must all be restrictions of some one sortal. My own position is that the claims of (D₂) would be adequately met by showing:

(5.7) \((\exists t)(a = t b \land b = t c \land c = t d)\)

which would leave open the possibility that if we instantiate 'T' for 't', 'T' might only intersect with 'S', 'S₁' and 'S₂' and that there might be more than one instantiation for 't' which would result in a true proposition. That is, it is possible that:

\[
\begin{align*}
(a) & \quad a = T₁ b \land b = T₁ c \land c = T₁ d \\
(b) & \quad a = T₂ b \land b = T₂ c \land c = T₂ d \\
(c) & \quad \neg (S \subseteq T₁ \lor S₁ \subseteq T₁ \lor S₂ \subseteq T₁) \\
(d) & \quad \neg (S \subseteq T₂ \lor S₁ \subseteq T₂ \lor S₂ \subseteq T₂)
\end{align*}
\]

1. Ibid., pp. 30-31.
are all true. In this section I shall be concerned with Wiggins' arguments against (5.8c) and (5.8d), in the section which follows with (5.8a) and (5.8b).

Wiggins' first move is to establish that when the individual comes to the end of its $S$-phase, say, it is not the case that any old sortal will serve to continue it into its $S_1$-phase. 'That', he rightly says, 'would be wrong because it would fail to distinguish sufficiently between a thing's being replaced and its continuing to exist.'\(^1\) Having established that, he is concerned to mark out the subset of sortals which would continue it in existence and to argue that it is the (unit) set of (ultimate) sortals which $'S'$, $'S_1'$ and $'S_2'$ restrict.

(III) \([S]\)uppose that there were as many as two ... sortals, '$T_1$' and '$T_2$' competing respectively to make $b$ co-incide under '$T_1$' with $c^1$ and under '$T_2$' with $c^2$. Since by the prohibition on branching not both can secure $b$, why should either? If there is to be any such thing as individuation then there must be some basis on which putative rival claims can be distinguished, and the only basis there could be is this. A thing is legitimately individuated and singled out as one thing through a chain of phases if and only if the chain is so organized that the sortals $'S'$, $'S_1'$,... describing a thing in adjacent phases, phase $S$, phase $S_1$, ... are restrictions of the same sortal. Now if the relation $"S"$ restricts the same sortal as $"S_1"$, is an equivalence relation, then this relation will secure that some one underlying sortal extends from any adjacent pair of phases throughout the whole chain back to the beginning and forward to the end of this particular individual's existence.\(^2\)

1. Ibid., p. 31.

2. Ibid. (I have changed Wiggins' choice of letters for sortal constants in the interests of clarity.)
This is the first part of Wiggins' argument; in the second
he seeks to prove that 'γ restricts the same sortal as δ' is
an equivalence relation and will be dealt with in §5.3. Wiggins'
argument seems fairly confused: branching it seems to me has
little to do with the question in hand, and that little mainly
concerns the Uniqueness Principle. The only remark that
Wiggins here makes which supports the Restriction Principle
is that a thing can be 'legitimately individuated and singled
out as one thing through a chain of phases' only when the
Restriction Principle is satisfied. To secure (D₂) all we
need is (5.7) which leaves open the possibility that (5.8) is
true. To secure (5.7) all we need is:

\[(5.9) \quad (\exists x) (S(x) \land S₁(x) \land ... \land T₁(x))\]

not the much stronger

\[(5.10) \quad (\forall x) [(S(x) \land T₁(x)) \land (S₁(x) \land T₁(x)) \land ...]\]

which seems to be what Wiggins thinks we need. An example
might make it clear why we do not need (5.10). Suppose we
have a man (let's call him 'J.S.Mill') who was a civil servant
and subsequently became an M.P. We could, of course, use
'person' as covering concept, in which case (5.10) would hold
- for being a civil servant and being an M.P. both entail
being a person. On the other hand, we could use 'husband of
Harriet Taylor' as covering concept in which case (5.9) would
be adequate - for neither being a civil servant nor being an
M.P. entails being a husband of Harriet Taylor. Moreover,
there seems little doubt that J.S.Mill is thus legitimately
singled out and individuated, and without reference to 'person'.
Moreover, there are cases in which, so far as I can see, no sortal superordinate to the 'phase' sortals exists. For example, a book-shelf may be turned into a desk, and although 'plank of wood' may be an adequate covering concept for identifying the two it is plainly not superordinate to either 'book-shelf' or 'desk' but merely intersects with them. Surely the items involved - the desk, the book-shelf and the plank - are all legitimately individuated, and we know what (R)-relative identities may be correctly asserted between them.

However, Shoemaker attempts to remedy the gap in Wiggins' argument. Shoemaker considers very much the same situation as Wiggins did, although Shoemaker is a bit more liberal in that he permits the possibility that an individual may temporarily fall under two sortals (intersection in the sense of (3.6)). Wiggins takes no account of an object whose chequered career may consist of an S-phase followed by a phase in which it fell under both 'S' and 'S_1', followed by an S_1-phase. This is indeed a possibility and Shoemaker makes room for it by an extension of the Restriction Principle to the effect that an individual can simultaneously fall under two sortals (i.e., in Shoemaker's terminology the 'two sortals are (or can be) simultaneously satisfied') only if there is some sortal which both restrict. ¹ (Here, again, the possibility of mere intersection is ignored.) But this extension is a comparatively minor matter.

¹ Shoemaker, 'Wiggins on Identity', p. 536 (Munitz, p. 110).
Shoemaker concludes that we 'would have a basis for this [i.e., that the $S_1$ continues the former $S$ rather than replaces it] if we knew that "$S$" does ... restrict a common sortal with "$S_1"'.\(^1\) Clearly restriction of a common sortal would be sufficient, but we so far have nothing to show that it would be a necessary condition. Shoemaker now attempts to provide the missing link:

If it is true that an $S_1$-phase can ... continue a former $S$ in existence, presumably this must be a conceptual truth, and presumably it must be true in virtue of the nature of the sortal concepts 'S' and 'S_1' and their relationship to one another. It is relatively easy to see how this would be a conceptual truth if 'S' and 'S_1' were restrictions of a common sortal 'T' for then 'S' and 'S_1' would share a common criterion of identity; the principle for tracing S's through time would be the same as the principle for tracing $S_1$'s through time. But it is difficult to see how any other relationship between 'S' and 'S_1' would make it a conceptual truth that an $S_1$-phase can ... continue a former $S$ in existence.\(^2\)

As Shoemaker admits, the argument is 'plausible though hardly conclusive.'\(^3\) It seems to me, however, that its plausibility is also fairly limited unless one is prepared to accept the Restriction Principle (or something very like it) in the first place.

Shoemaker's argument depends upon two claims: (1) That it must be a conceptual truth about 'S' and 'S_1' which enables an $S_1$ to keep a former $S$ in existence; (2) That 'S' and 'S_1'

---

1. Ibid., p. 537 (Munitz, p. 111).
2. Ibid.
3. Ibid.
only share a common criterion of identity when they restrict a common sortal. The latter claim, as I've argued in §4.2, is most likely false and further comment is unnecessary until better arguments are produced in its favour. The first claim, however, is surprising and, I think, also false. Wiggins, in fact, seems to reject just such a claim, when he says:

[N]othing in the proof [of the Restriction Principle] must depend upon a certain conceptual conservatism into which no philosophical inquiry into substance and identity should find itself forced, viz. the supposition that one can tell a priori for any given sortal ... whether or not it is a substance-sortal or merely a phase-sortal. ¹

Now clearly it is a conceptual matter about two sortals whether either restricts the other and thus, if we could be sure that 'S' and 'S₁' did restrict some common sortal, we could be sure of Shoemaker's claim (1). But, in fact, we have to argue the other way: from claim (1) to the claim that 'S' and 'S₁' restrict some common sortal, and this is presumably why Shoemaker admits that his argument is plausible but not conclusive. However, its plausibility is due solely to the fact that the intersection of sortals has been neglected, for it is not a conceptual matter that two sortals intersect. It may be the merest contingent fact that there is a sortal with which both 'S' and 'S₁' intersect and yet, from the point of view of (D₂), there is no reason why such a sortal, 'T', say, shouldn't be sufficient to continue the former S in existence as an S₁, the same T as the former S. Moreover, there are cases in which

¹. Identity and Spatio-Temporal Continuity, fn. 37 (p. 69).
'S' and 'S₁' both restrict a sortal 'I' and yet we don't have amongst these three sortals a covering concept which permits the S₁ to continue the former S in existence. We can easily give an example of both cases (although an example Wiggins would disallow for different reasons): It is possible for a bookshelf to continue a former desk in existence in the case in which they are both the same plank of wood. Now this is certainly not a conceptual truth for it is merely a contingent fact that the desk and the bookshelf are made of a plank of wood (i.e., 'desk' and 'book-shelf' both intersect, but do not restrict, 'plank of wood'). What is a conceptual truth about 'desk' and 'book-shelf' is that they both restrict 'piece of furniture', but neither 'desk' nor 'book-shelf' nor 'piece of furniture' can be used as covering concept to permit the bookshelf to continue the former desk in existence. But perhaps Shoemaker means something weaker by 'conceptual truth': for the possibility that the bookshelf permits the former desk to continue in existence (under the covering concept 'plank of wood') certainly depends upon its being conceptually possible that 'desk' and 'book-shelf' intersect with 'plank of wood'. But if this is all he means then it is also relatively easy to see alternative explanations of this conceptual truth to the Restriction Principle.

It seems to me that neither Wiggins' nor Shoemaker's arguments are correct. In fact we do not need the Restriction Principle but rather what we might analogously call the Intersection Principle. Neither Wiggins nor Shoemaker do anything
to make us doubt the adequacy of the Intersection Principle. The Intersection Principle, it seems to me, has much intuitive appeal whilst the Restriction Principle is in fact too strong.\(^1\)

15.3 **The Uniqueness Principle.** In the second part of his argument Wiggins seeks to prove the Uniqueness Principle on the basis of the Restriction Principle. He major effort in this direction is to try and show that \(\gamma\) restricts the same sortal as \(\delta\)' the relation \(R(\gamma, \delta)\)' is an equivalence relation. But before we consider that argument it is worth considering Wiggins' earlier remarks quoted in (III) above which may help to put it in perspective. In (III) Wiggins argues, first, that if there were two sortals \(T_1\)' and \(T_2\)' competing to continue a former \(S\) in existence then branching would occur. But if an individual branches at \(b\) into \(c^1\) and \(c^2\) then it cannot be identical with both and thus it is identical with neither. Thus neither \(T_1\)' nor \(T_2\)' can provide the \((D_2)\)

---
1. In dealing with sortals subordinate to ultimate sortals Wiggins is prepared to avoid 'unrealistic and absurd prohibitions on cross classification' (*Identity and Spatio-Temporal Continuity*, p. 33). In a footnote he admits that dichotomous division would ensure a classificatory system such that every class would either be disjoint from every other class or else either restricted by or restricting some other class. But such a classificatory system would not consist of sorts, for the complement of a sortal is not a sortal. He also gives an example from Chomsky's *Aspects of the Theory of Syntax*, (Cambridge, Mass: M.I.T. Press, 1965), p. 80, to illustrate cross-classification among sorts (*ibid.*, fn. 39 [pp. 70-71]). It is surprising that he assumes, without argument, that such features do not extend to ultimate sortals.
completing concept necessary to preserve the former $S$ in existence. Now, however, Wiggins successively deploys the Restriction Principle and the Uniqueness Principle. The Restriction Principle implies that what is required to continue the former $S$ in existence through an $S_1$-phase is a sortal which both '$S$' and '$S_1$' restrict. The Uniqueness Principle then ensure that there is not more than one such ultimate sortal and thus that branching is prohibited. This is not (and does not, I think, profess to be) a logically valid argument for the Restriction and Uniqueness Principles, but rather the sort of 'argument' which Russell used to justify the theory of types - they are principles which avoid undesirable results (Wiggins has done nothing so far to show that they are the only such principles).

But I doubt that Wiggins' 'argument' gets us even this far. I cannot see that allowing a choice of sortals for continuing the former $S$ in existence commits one to branching, for surely we might have $b_{S_1} = T_1 c$ and $b_{S_1} = T_2 c$, even though $(T_1 \neq T_2)$, and no case of branching results here. Branching is, I think, an entirely illusory penalty for the failure of the Uniqueness Principle. The relation between branching and the Uniqueness Principle which Wiggins wants is rather that: if branching is prohibited then the Uniqueness Principle can be proved, which doesn't entail that if the Uniqueness Principle is false then branching is permitted.

The main part of Wiggins' argument for the Uniqueness Principle is his attempt to prove that '$R(\gamma, S)$' is an equivalence relation. Given that, and the Restriction Principle's requirement that '$S$', '$S_1$', and '$S_2$' all restrict the same sortal, he
can prove the Uniqueness Principle, i.e., that they cannot all restrict more than one sortal. To prove that \( R(\gamma, \delta) \) is an equivalence relation he has to prove that it is reflexive, symmetrical and transitive. Proving symmetry and reflexivity is easy: If 'S' restricts the same sortal as 'S_1', then 'S_1' restricts the same sortal as 'S'; and 'S' restricts the same sortal as 'S'. Transitivity gives more trouble. The case Wiggins has to rule out is that in which 'S' restricts the same sortal as 'S_1', namely 'T_1', and 'S_1' restricts the same sortal as 'S_2', namely 'T_2', where \( \neg(T_1 \equiv T_2) \) and \( \neg(\exists v)(T_1 \subseteq v \land T_2 \subseteq v) \). The situation may be represented diagrammatically:

![Fig. 2](image)

We can immediately rule out dummy sortals and the disjunctive term 'T_1 \lor T_2' as sortals superordinate to 'T_1' and 'T_2'. Again, I quote Wiggins' argument at length, it is impressive in its obscurity:

To be an \( S_1 \) is on present suppositions to be a \( T_1 \) which is \( \emptyset \) or a \( T_2 \) which is \( \psi \), for some \( \emptyset \) and \( \psi \) or other. Now either the sortals 'T_1', 'T_2' are so related that
or they are not. If they are not, and if 'T_1' were nevertheless allowed the status of legitimate sortal and were a possible covering concept, then nothing would have been done to exclude the possibility of an object a's being classified as an S_1, found to coincide under 'T_1' with b, and found to coincide under 'T_2' with an object c such that (\forall x)(b =_x c)

... So if we reject the logical possibility of branching, this option obliges us to reject 'S_1' altogether as a sortal.... But we had supposed it was a sortal.

It is difficult to see quite what role [a] has to play in this argument, except as a formal principle prohibiting branching. However, we should try and piece together the argument a bit at a time. Let's consider, first, why branching is bad. As far as I can see Wiggins must have something like the following reductio argument in mind. ([1]-[3] are the conditions for branching.)

[1] a =_{T_{1}} b
(premiss)
[2] a =_{T_{2}} c
(premiss)
[3] (\forall x)(b =_x c)
(premiss)
[4] (a =_{T_{2}} c) \Rightarrow T_{2}(a)
(premiss)
[5] T_{2}(a) \Rightarrow a =_{T_{2}} a
(premiss)
[6] a =_{T_{2}} b
([1], subst. of 'x =_{T_{1}} y', [2][4][5], M.P.)

1. Ibid., p. 33. Again, I have altered some of the letters Wiggins used for sortals in the interests of clarity. The first 'or' in the first sentence of the quoted passage should read 'and' for we are supposing that 'S_1' restricts both 'T_1' and 'T_2'.

Lines [4] and [5] are plainly unexceptionable theses of any relative identity theory. However, in the derivation of [6] we have also used a principle of substitutivity of relative identity which has not been made explicit. The principle Wiggins probably intends is the one he's used earlier in the book\(^1\) and which we rendered as (1.13). But as we noted in §1.5, if (1.13) holds then (R) is ruled out. So far as I can see the (R)-relativist could be perfectly happy admitting the logical possibility of splitting. Wiggins makes it clear that his argument presupposes the denial of (R)\(^2\) yet if the conclusion to his argument is correct there will certainly be a temptation to use it as a means of criticizing (R). That is, using the argument to show that the version of (R) which results from employing (D) can be ruled out.

The next thing to do is to establish that if [a] holds then splitting is ruled out. The argument goes as follows (we utilize the first three premisses of the previous argument as our first three lines):

---

1. Namely, his formula (1) on p. 3 of *Identity and Spatio-Temporal Continuity*.
So we have a proof (1) that branching is inconsistent with
the denial of (R); (2) that branching is inconsistent with \([a]\).
But plainly \([a]\) is true only if (R) is false, so Wiggins'
argument against splitting depends heavily upon the denial
of (R). But, for the sake of argument, let's grant Wiggins'
prohibition on splitting: can he now prove the transitivity
of \('R(y,δ)'\)?

Suppose that we have some individual \(a\) such that

\[(5.11) \quad S_1(a)\]

is true. Since \('S_1' restricts both \('T_1' and \('T_2' we have line
[4] of our second argument, and thus:

\[(5.12) \quad T_1(a) \land T_2(a)\]

by modus ponens, which gives

\[(5.13) \quad \exists x (T_1(x) \land T_2(x))\]

which is the condition for intersection. If \(a\) is a \(T_1\) then it
must be the same \( T_1 \) as some \( T_1 \), and similarly for '\( T_2 \)'. Given (5.11) and [4] of the second argument we get:

(5.14) \((\exists x)(x =_{T_1} a)\)

(5.15) \((\exists x)(x =_{T_2} a)\)

and thus:

(5.16) \(b =_{T_1} a\)

(5.17) \(c =_{T_2} a\)

which are the first two conditions for splitting. Now presumably Wiggins' argument is that the state of affairs envisaged in Fig. 2 requires splitting. That is, requires in addition to (5.16) and (5.17):

(5.18) \((\forall x)(b \neq c)\)

The rest of the argument is a reductio. The situation in Fig. 2 requires splitting, splitting can be ruled out, therefore the situation in Fig. 2 can be ruled out. But the fact that things are as presented in Fig. 2 doesn't force us to accept (5.18), for it may be the case that \( b \) and \( c \) lie in the intersection of \( 'T_1' \) and \( 'T_2' \) and, moreover, may be such that either

(5.19) \(b =_{T_1} c\)

or

(5.20) \(b =_{T_2} c\)

is true. In either case the need to accept (5.18) and consequently the allegedly undesirable case of splitting is avoided.
Thus even if we prohibit splitting there is still a possibility that we may get situations in which a sortal 'S_1' restricts both 'T_1' and 'T_2' which are neither co-ordinate nor restrict a common sortal.

But a further point is the most decisive. The inference pattern:

'S' restricts the same sortal as 'S_1'
'S_1' restricts the same sortal as 'S_2'

\[ \therefore 'S' \text{ restricts the same sortal as 'S_2'} \]

is invalid. It is a comparatively easy matter to construct a counter example with Venn diagrams (see Fig. 3). Thus 'R(\gamma,\delta)' is not an equivalence relation and hence we may not assume that if 'S' and 'S_1' restrict 'T_1' and 'S_1' and 'S_2' restrict 'T_2' there must be just one sortal which both 'S' and 'S_2' restrict. There may, indeed, be none or there may be more than one.

We can, however, 'prove' that 'R(\gamma,\delta)' is an equivalence relation in a far simpler way than that attempted by Wiggins,
but only if we have the Restriction Principle à la (5.1a). ¹

Suppose that \( R(S_1, S_2) \) and \( R(S_2, S_3) \) then, for some sortal '\( T_1 \)', \( S_1 \subseteq T_1 \) and \( S_2 \subseteq T_1 \) and, for some sortal '\( T_2 \)', \( S_2 \subseteq T_2 \) and \( S_3 \subseteq T_2 \). But since all \( S_2 \)'s are both \( T_1 \)'s and \( T_2 \)'s, we have \( T_1 \mid T_2 \) and hence by (5.1a) \( R(T_1, T_2) \). Thus, for some sortal '\( V \)', \( T_1 \subseteq V \) and \( T_2 \subseteq V \) and so \( S_1 \subseteq V \) and \( S_3 \subseteq V \) (by transitivity of '\( \gamma \subseteq \delta \)' and thus \( R(S_1, S_3) \), by (4.5). Hence '\( R(\gamma, \delta) \)' is transitive, and since it is also symmetrical and reflexive it is an equivalence relation. The situation shown in Fig. 3, then, not merely shows the Uniqueness Principle to be false but the Restriction Principle as well. But such a situation is precisely what the Restriction Principle is designed to exclude though there is no good reason for thinking that it ought to be excluded.

Shoemaker has an alternative argument which seeks to validate the Uniqueness Principle on the basis of the Restriction Principle. For this argument he employs a very obscure premiss:

(IV) Where two sortals '\( S \)' and '\( T \)' are such that an \( S \) and a \( T \) can exactly coincide at a given time, that is, can occupy exactly the same place at the same time, what will show them not to be cosatisfiable will be the fact that a particular \( S \) and a particular \( T \) can coincide at one time without coinciding throughout their histories. ¹

Given (IV) Shoemaker's argument proceeds as follows (the sortals involved are related as shown in Fig. 2 and Shoemaker's aim

1. The argument is due to Stevenson. See his 'Extensional and Intensional Logic for Sortal-Relative Identity', p. 10.
2. 'Wiggins on Identity', p. 539 (Munitz, p. 113).
is to prove that 'T₁' and 'T₂' restrict some, one common sortal):

[(IV)] implies that if sortals 'T₁' and 'T₂' are cosatisfiable [i.e., are such that a single individual may simultaneously fall under both] they must be such that it is necessarily the case that a T₁ and [a] T₂ cannot coincide at one time without coinciding throughout their histories. And this can be so only if 'T₁' and 'T₂' share the same criterion of identity, the same principle for tracing their instances through space and time. They will share the same criterion of identity if they restrict a common sortal (as was noted in the argument for [the Restriction Principle]) and it is difficult to see how else they could do so.

Now much here depends upon whether my gloss on 'cosatisfiable' is correct. It seems to me that it must be,² But on this reading (IV) is straightforwardly false. Consider the sortals 'BMC car' and 'yellow car', these are not cosatisfiable because cars may be resprayed and thus, though a yellow car and a BMC car may coincide at a certain time, it doesn't follow that they coincide throughout their histories. Thus there cannot be one individual which is simultaneously a yellow car and a BMC car. But this seems to me wildly implausible. Of

1. Ibid.
2. Cf. Shoemaker's remark, ibid., p. 539 (Munitz, p. 112): "T₁" and "T₂"... could fall to be so related that something can be, at one and the same time, both a T₁ and a T₂. Or as we might put it, they could fall to be "cosatisfiable". But in that case they could not both be restricted by "S₁".... This plainly suggests that 'S' and 'T' are cosatisfiable iff (∃x)(∃y)[R(T)(S(x)) & R(S)(T(x))], i.e., the intersection relation given by (3.6).
course, on (D₁)-relativist grounds we cannot just say that the BMC car is the same individual as the yellow car, unless we specify some sortal covering concept. But this requirement is easily met by 'car'. On the other hand, to strengthen the notion of cosatisfiability to ensure the truth of (IV) would require: 'S₁' and 'T₁' are cosatisfiable iff (∀x)(∀t)[(S₁(x,t) & T₁(x,t)) ⇒ (∀t')(S₁(x,t') ⇒ T₁(x,t'))]. But if we use (IV) with this sense of 'cosatisfiability' in Shoemaker's subsequent argument we are not entitled to assume that 'T₁' and 'T₂' are cosatisfiable simply because both are restricted by 'S₁'.

If we use Shoemaker's weak sense of 'cosatisfiable', and permit him (IV) and some unstated assumptions about criteria of identity then his argument would be valid. 'S₁' restricts both 'T₁' and 'T₂' and hence 'T₁' and 'T₂' are cosatisfiable by definition (for every S₁ must coincide with a T₁ and a T₂). But if a T₁ and a T₂ ever coincide then, by (IV), they always coincide. He then needs two assumptions: (1) That a T₁ and a T₂ always coincide only when 'T₁' and 'T₂' convey the same criteria of identity; (2) That 'T₁' and 'T₂' can only convey the same criteria of identity when they restrict some common sortal. This will give him his conclusion as stated, but not the Uniqueness Principle which he hoped for. That would require a third principle about criteria of identity, possibly: (3) No two ultimate sortals share a criterion of identity. Whether or not he can hold both (IV) and his weak definition of 'cosatisfiability', of his three assumptions about criteria of identity only the third is correct. In fact, sortals in natural language do not behave in the neat way Shoemaker (and Wiggins) seem to think.
Let me try and summarize the results of this tortuous discussion. In the first place Wiggins thinks that in order to secure (5.4) he needs to show that there can be only one ultimate sortal under which any individual falls and that it falls under that sortal throughout its career. In fact, (5.4) only requires that there be at least one sortal under which an individual falls throughout its career. Moreover, (D2) does not require anything more than (5.4). Secondly, Wiggins thinks that all the sortals under which an individual successively falls must restrict some sortal under which it falls throughout its career. But this, also, is too strong: all that is required is that they intersect with an appropriate sortal. His acceptance of the Restriction Principle is largely unargued and plainly mistaken. Thirdly, his argument that 'R(γ,δ)' is an equivalence relation is based on the rejection of splitting which in turn relies upon the denial of (R). Fourthly, even if we agree to ban splitting as well as accepting the Restriction Principle there is nothing in the situation we are seeking to avoid (Fig. 2) which entails a violation of that ban. Thus a mere ban on splitting will not help us to avoid the situation shown in Fig. 2. Finally, the relation 'γ restricts the same sortal as δ' is plainly not an equivalence relation since it fails transitivity. Thus I see no objection to holding that a single individual may successively fall under 'S', 'S_1', 'S_2', ... where there is no sortal which they all restrict. Nor do I see any objection to holding that a given sortal 'S' may restrict two (or more) ultimate sortals, 'US' and 'U'S', which intersect but are not co-ordinate.
CHAPTER SIX

ON THE INCOMPLETENESS OF ABSOLUTE

IDENTITY STATEMENTS

§6.1 Some Preliminary Matters not in Dispute. It is now time to consider the second of the two questions raised in §1.4. What (if anything) is wrong with absolute identity claims which makes them incomplete in a way which can be remedied by the addition of a general noun? In this section I want to note two ways in which absolute identity statements are not incomplete, at least in the way we're interested in.

In the first place it needs to be pointed out that the incompleteness we are concerned with is not syntactic, at least as far as English is concerned. There may, as Nelson points out, be some ungrammaticality in saying 'W.S.Porter is the same as O.Henry' but such ungrammaticality is certainly marginal, and even if we think that this sentence is ungrammatical we can certainly think of others of the same form which cannot be objected to on this ground. Thus what incompleteness there is in English statements having this form must be semantic incompleteness. On the other hand, in a canonical language for relative identity it may, indeed, be a reasonable requirement to exclude strings of the form 'a = b' from our list of well-formed formulae. However, such a move would be rather arbitrary were it not for the semantic incompleteness of the natural language.

analogues of such strings.

Secondly, we can make another preliminary remark, also due to Nelson.¹ The incompleteness of 'a is the same as b' cannot wholly be on account of the ambiguity that this sentence has between qualitative and numerical, or between type and token, identity. The reason is not that just the same sort of ambiguity infects 'a is identical with b' for this sentence, in ordinary language, just as often conveys qualitative as numerical identity. In the two best known relative identity theories, those of Geach and Wiggins, the incompleteness remains in sentences such as 'a is the same thing as b' where numerical identity is plainly intended. It may be possible to fashion some third theory in which such sentences weren't incomplete and for such a theory the incompleteness of 'a is the same as b' may be wholly or in part due to its ambiguity between qualitative and numerical identity. It might be a good idea to leave room for this third theory by noting a possible version of (D):

(D.0) Absolute identity claims are incomplete in the sense that they do not make it clear whether numerical or qualitative identity is intended.

Of the five versions of (D) distinguished in §1.4 on the basis of the different possible types of completion, (D.0) goes with (D₁) which allows completion by any type of general noun. However, this theory is not what either Geach or Wiggins have in mind and we shall henceforth ignore it.

¹. Ibid.
6.2 The Relation between (R) and (D). Whether we claim that there's anything wrong with 'a is the same as b' or not we have to admit that in ordinary English statements of this form are expansible into statements of the form 'a is the same K as b'; we can expand 'Cicero is the same as Tully' into 'Cicero is the same man as Tully'. Indeed, we can claim that for any such true statement there is such an expansion, and in general there will be more than one such. Thus, in general,

(6.1) a is the same as b

may be expanded either as

(6.2) a is the same K as b

or as

(6.3) a is the same J as b.

Now, if (R) is true there is no reason to assume that (6.2) and (6.3) have the same truth-value. So let us assume that (6.2) is true and (6.3) is false. It now appears that (6.1) as it stands has no determinate truth-value because it could be read either as (6.2) or as (6.3). This, then, could be one way of establishing a type of incompleteness of sentences of the form (6.1). If this is correct then (R) entails (D).¹

¹. This view has been accepted in the literature both by (R)-relativists and (D)-relativists. Cf. for example, Peter Sheehan, 'The Relativity of Identity', p. 27, and 'De Re Modality', (Unpublished A.N.U. Seminar Paper, 1972), §4. Also Wiggins, Identity and Spatio-Temporal Continuity, p. 1, Geach, it should be noted, does not employ this argument. Indeed, he seems rather to argue from (D) to (R), but sometimes it looks as if he only does this because he feels that (D) would be inexplicable without (R). See his somewhat grudging admission of (R) in Reference and Generality, p. 157.
This argument, however, is not valid. Firstly, we have done nothing to show that (6.1) does not have a truth-value of its own. From the fact that 'James is reading a book' can be expanded either to 'James is reading a book by Lytton' or to 'James is reading a book by Virginia' we can't infer that the original has no determinate truth-value (despite the fact that here the two expansions must differ in truth-value and it could not be the case that James is reading a book which isn't by somebody or other). Secondly, the (R)-relativist is not claiming that (6.2) and (6.3) will always differ in truth-value but only that they sometimes may do so. Accordingly, even if the inference pattern were valid, the relativist is only entitled to infer from (R) that (6.1) is sometimes indeterminate as to truth-value. On those occasions on which the possible expansions do not conflict in truth-value we have shown no indeterminacy in (6.1).

Thus if a and b are the same in all respects or distinct in all respects (6.1) cannot suffer indeterminacy of truth-value on account of conflicts in truth-value between different possible expansions. This is not captured by:

\[(6.4) \quad a = b \Rightarrow (\forall k)a =_k b\]

for the consequent of (6.4) is always false, since a and b do not fall under every general noun. Instead we need:

\[(6.5) \quad a = b \Rightarrow (\forall k)[(k(a) \& k(b)) \Rightarrow a =_k b]\]

that is, if a and b are the same then they are the same with respect to every general noun under which both fall. Moreover, there seems no reason to object to the converse implication,
so that we have:  

\[(6.6) \quad a = b \equiv (\forall k)[(k(a) \& k(b)) \rightarrow a =_k b]\]

In the case in which a and b are distinct in all respects there is no need for the special requirement that a and b both fall under the general nouns in question since they will be distinct with respect to any general noun under which one or the other does not fall.  

So we need:

\[(6.7) \quad (\forall k)\sim(a =_k b) \rightarrow \sim(a = b).\]

It may be objected that (6.6) is not a natural interpretation to place on a statement of the form (6.1). If someone says, for example, 'John's car is the same as Bill's' it may seem more natural to say that there is some respect in which John's car and Bill's car are the same. This view may be generally stated thus:

1. In (6.5) and (6.6) there may still be problems with the scope of the second-order quantifier. If it is permitted to include intensional general nouns (e.g., 'object of Bill's thought') it may well impose too strong a condition on 'a = b'.

2. It will be helpful to introduce here a notational distinction due to Stevenson ('A Formal Theory of Sortal Quantification', p. 17) between '\(\sim(a =_K b)\)' for 'a is not the same \(K\) as b' where possibly '\(\sim K(a) \vee \sim K(b)\)' and 'a \(\neq_K b\)' for 'a is not the same \(K\) as b' where '\(K(a) \& K(b)\)'.

3. In fact, I think either reading may be acceptable according to the circumstances. Compare the two interpretations of 'Edments sell it for less', firstly as an advertising slogan and secondly in a comparison of prices in two shops. (As Geach once remarked, logical examples don't have to be true.)

4. Wiggins, Identity and Spatio-Temporal Continuity, p. 28 adopts (6.8) but limits covering concepts to sortals.
(6.8) \[ a = b \supset (\exists k) a =_k b \]

(6.8) is the contraposition of (6.7). Together with the converse implication we get:\(^1\)

(6.9) \[ a = b \equiv (\exists k) a =_k b \]

which would enable us to assign definite truth-conditions to statements of the form (6.1) just as (6.6) would, irrespective of the argument on page 150.\(^2\) The trouble with (6.8) and (6.9) is that if we run them in conjunction with (LL) we can derive Wiggins' formula (1.13) which rules out (R) which it is our express purpose in this section to admit.\(^3\) (With (6.6) if 'a = b' is true then, of course, we cannot generate a case of (R), but this does not rule out (R) completely since the (R)-relativist is not claiming that for every true \(K\)-identity statement, 'a =_K b' there is a true \(J\)-distinctness statement, 'a \(\neq_J \) b'.) We might, however, keep (6.8) or (6.9) and (R) so long as we do not interpret '=' as it is interpreted in the absolute theory but as an (unspecified) relative identity relation.\(^4\) There is still, of

---


2. In the context of a formal theory of (R)-relative identity it seems best, if we are to introduce '=' into the syntax, to convert (6.6) into a definition for it. This has two advantages: (i) (6.6) captures what we mean by 'a and b are the same absolutely'; (ii) correspondingly, we can give '=' the reading it has in absolute identity theory and run (LL) in conjunction with (R) - a policy which has its advantages. (See below, §1.8.2.)

3. See above, §1.5.

4. See Odegard's non-(LL) account of the indiscernibility of identicals in 'Identity Through Time', p. 36; and my discussion in §8.2.
course, an indeterminacy in (6.1) when it is interpreted by (6.9) for it does not tell us in which respect a and b are the same, but this is not as damaging as an indeterminacy of truth-conditions. It amounts merely to the fact that (6.1) is not so informative as (6.2) or (6.3), but there is no reason why every statement should attain some arbitrary standard of informativeness.

Moreover, even this lack of informativeness in (6.1) may be remedied by context. Geach makes allowance for cases in which (6.1) appears in a context which makes clear in which respect the identity is intended. If a formal theory of relative identity is to be completely adequate for natural language it will have to be placed within a context logic. The technical details of such a programme, however, are very difficult and in what follows I shall largely ignore context and concentrate on a context-free theory of relative identity (which will be difficult enough). However, in natural language, it is only if the context fails to provide a covering concept for (6.1) and fails to suggest either (6.6) or (6.9) as the correct interpretation that (6.1) might be left indeterminate in truth-value as a result of (R).

But so far we do not even have an argument to show that (6.1) does not have a truth-value of its own, even without context. Moreover, I don't think we will be able to rule out

---

1. For example in 'Identity', p. 3. See also his parallel remarks on 'ζ is good' in 'Good and Evil', Analysis, vol. 17, 1956, p. 34.

2. See Goddard and Routley, The Logic of Significance and Context.
this possibility merely by adverting to the fact that (6.1) may have two expansions with conflicting truth-values. In short, there is no means of deducing (D) from (R).¹ Even in cases of sentences of clearly indeterminate truth-value (e.g., 'I was shocked by the shooting of the Marines') the indeterminacy is not proved simply by the fact that there are two readings of the original. Of course, we can argue that if there were not the possibility of the two readings then there would be no indeterminacy but that merely shows that if there is an indeterminacy then there is the possibility of two readings;² not that if there is a possibility of two readings then there is an indeterminacy.

Although (R) does not on its own entail (D) another thesis Geach holds does. Explicit recognition of this thesis is due to Dummett. Even supposing that (6.1) is ambiguous this does not mean that 'same' is ambiguous any more than the ambiguity of 'I was shocked by the shooting of the Marines' shows that 'shocked' is ambiguous. Dummett argues that 'same' and other polygamous terms such as 'good' and 'real' are univocal but 'represent a kind of operator which forms, from a given general term, another general term whose sense is uniformly related to that of the original general term.'³ Now if we can treat 'ζ is the same... as η' as a function from

---

1. I am grateful to Richard Routley for bringing me to a reluctant recognition of this fact.

2. This seems to be Geach's argument. Cf. Reference and Generality, p. 157.

general nouns to relations, we can treat 'a is the same ... as b' as a function from general nouns to truth-values. Let us call this second view the **function thesis**.

Dummett attributes the function thesis to Geach and, though Geach does not, I think, explicitly avow it in connection with 'same', it does not seem to conflict with anything he says about 'same' and he does clearly avow it with respect to 'good'. He compares 'ξ is good' with 'ξ is the square of':

> There is no one number by which you can always multiply a number to get its square: but it does not follow either that 'square of' is an ambiguous expression meaning sometimes 'double of', sometimes 'treble of', etc., or that you have to do something other than multiplying to find the square of a number; and, given a number, its square is determinate.1

In these respects he presses the analogy between 'ξ is the square of' and 'ξ is good.' There seems no reason to reject a similar account of 'ξ is the same as η'. Moreover, there are other grounds, apart from this analogical use of texts, which support Dummett's attribution. Geach, as we've seen, holds that 'a is the same as b' is incomplete in sense, but I don't think he can derive this result from (R) - indeed, he makes no attempt to do so - but he can derive it (with some plausible assumptions about sense) from the function thesis.

One may be tempted to reject the function thesis as part of the analysis of natural language identity statements on the grounds that such paradigmatic operators as '¬□' without an argument are glaringly incomplete syntactically, whereas there

1. Geach, 'Good and Evil', p. 38.
are well-formed English sentences of the form (6.1). But here we are comparing operators in a formal, context-neutral language the formation rules of which are effectively specified, with operators in a context-sensitive natural language the formation rules of which are largely unknown. If we contrast '¬[]' with its natural language 'equivalent', 'Not necessarily', we find that the latter (unlike the former) may form a syntactically complete and well-formed utterance in a context which supplies its propositional argument. Similarly, in natural language 'a is the same as b' may be a syntactically complete and well-formed utterance in a context which supplies a covering concept. The proper contrast for '¬[]' is not the natural language (6.1), but the formal language 'a = b' which is incomplete or not depending upon the formation rules of the language it is part of. Plainly it would be incomplete in a Geachian theory which included the function thesis; and equally plainly it is not incomplete in absolute identity theory.

These considerations raise questions about the status of the function thesis and its relation to ordinary language. English syntax is enormously permissive as regards identity statements: both absolute and relative identity relations are admissible; relative identity statements have the widest possible range of covering concepts; the syntax admits (R) but not (D). However, as we noted in §6.1, we are not primarily

1. For a thesis to be strong enough to count as a (D)-thesis I think the type of incompleteness which it specifies must be a general incompleteness infecting every statement of the form (6.1).
concerned with English syntax. If anything is wrong with (6.1) it is semantic rather than syntactical and all we have shown is that (D) cannot be a constraint on English syntax. This is not to say that (D) and the function thesis may not be principles of a relative identity theory which seeks to analyse the use of identity relations in natural language. In fact, since our relative identity theory will be context-free whilst natural language is context-sensitive, we would expect the theory to impose more constraints than a grammar of natural language identity statements. It would be highly plausible to impose the function thesis as one such constraint.

There are several ways in which we might view the relation between the relative identity theory and natural language. We might treat the theory as a generative base, or deep structure, for a syntax of natural language identity statements, so that from it we could generate, by transformation rules external to the theory, all and only natural language identity statements. (Clearly some such external rules will be needed if only to fit in different lexical items in place of the syntactic units of the theory.) Whether this is true of the theory proposed here will not be known until these external transformation rules can be specified. Secondly, we could treat the theory as a canonical language into which every natural language identity statement could be translated without loss of intended sense or truth-value. Thirdly, we could treat the theory primarily as a deep structure for a certain subset of natural language identity statements, from which all the members of that subset could be generated by means of (at least) lexical and context rules external to the theory. It may even be the case that,
by means of further external rules, the theory could be used to generate all and only natural language identity statements, but at the moment that's pure speculation. Of these three accounts of the whole relative identity enterprise I think the third one is correct but my reasons for this claim will not become apparent until \textsection 6.4.

From the function thesis we can derive a strong (D)-thesis, namely:

\begin{quote}
(D.I) Absolute identity statements are indeterminate in truth-conditions.
\end{quote}

And from (D.I) we can derive an even stronger version of (D) if we are prepared to accept certain views about meaning. In particular, if we accept Donald Davidson's theory that 'to give truth conditions is a way of giving the meaning of a sentence',\textsuperscript{1} we can get from (D.I) to Geach's claim that absolute identity statements lack clear meaning or fully determinate sense. This is not implausible but largely depends upon what view of meaning one has. Clearly just what we want to say about absolute identity claims depends on more than just our views about identity. And there is a sense in which 'a is the same as b', like '625 is the square of', is significant, for it is composed of significant units correctly concatenated.

So far we have not considered why Geach adopts the function thesis. In its justification (R) plays a crucial role though I don't think it is entailed by (R) alone. Consider again

\footnotesize
'(\cdot)^2$', it takes different values as its argument and yields up different results each systematically related to the original argument. Similarly '$a = b$' takes different nouns as covering concepts and yields up different truth-values each systematically related to the covering concept (in exactly the same way as '$\sim\Box(\cdot)$' takes different propositional arguments and yields up different truth-values). If '$a = b$' always had the same truth-value whatever the covering concept we could treat '$=$' classically as a logical constant. Similarly, if '$(\cdot)^0$' were our only exponent there would be no point in treating exponents as functions rather than constants. But just as we treat '$(\cdot)^0$' as a function because we can treat it as one instance of the function '$(\cdot)^n$', so we treat '$a = b$' as a function even when we gloss it by (6.9), for example. Now we could claim that '$a = b$' when glossed in this way was a non-functional instance of '$a = b$' (similarly, I suppose, we could treat '$(\cdot)^0$' as a non-functional instance of '$(\cdot)^n$') and so we cannot derive from (R) alone the thesis that '$a = b$' is always a function. Nonetheless we can see that the function thesis would have no justification were it not for (R). 1

§6.3 The 'Fregean Analysis'. Dummett's point about 'the same' applies generally to all polygamous predicates. For, in general, any $n$-ary polygamous predicate with its general noun position empty will lack clear truth-conditions when coupled with $n$

1. We could, even without (R), claim that '$\xi = \eta$' was a function from general nouns to relations - since different relations are generated for different covering concepts. But from this version of the function thesis we could not derive (D.I).
individual terms. A related point which we may make in connection with identity also applies to other polygamous predicates. If \( \phi_k(\xi^1, \ldots, \xi^n) \) is an n-ary polygamous predicate then it cannot, in general, be analysed as \( \phi(\xi^1, \ldots, \xi^n) \land K(\xi^1) \land \ldots \land K(\xi^n) \). For example, '\( \xi \) is a good burglar' cannot be analysed as '\( \xi \) is good \& \( \xi \) is a burglar'. Frege clearly recognized this in connection with '\( \xi \) is one \( \kappa \)', which certainly cannot be analysed as '\( \xi \) is one \& \( \kappa(\xi) \)'\(^1\). But, equally clearly, he did hold that the relative identity relation '\( \xi \) is the same \( \kappa \) as \( \eta \)' could be analysed as '\( K(\xi) \land K(\eta) \land \xi = \eta \)'\(^2\). In his honour, therefore, I shall call this the Fregean analysis of relative identity relations. Now the Fregean analysis does not work for all relative identity relations: for example

(6.10) John's car is the same colour as Bill's car.

cannot be analysed as:

(6.11) John's car is a colour \& Bill's car is a colour.
\& John's car is the same as Bill's car.

So we can't uphold the Fregean analysis as a general principle, and we need to be clear about its scope. In view of (6.10) it has been claimed\(^3\) that the analysis fails for common-property statements as distinct from 'genuine' identity statements. This

---

3. For example, Perry, Identity, p. 22.
then requires some account of what a 'genuine' identity statement is. The matter is not easy\(^1\) and one is tempted to suppose that we can mark off 'genuine' identity statements by the alleged fact that the Fregean analysis works for them and not for common property statements. This approach, of course, does not help us get clear about the scope of the Fregean analysis.

The Fregean analysis is not always applicable. Is it ever applicable? Irrespective of whether we are relativists or not the relative identity relations '\(\xi\) is the same car as \(\eta\)' and '\(\xi\) is the same number as \(\eta\)' are different in both content and extension, for:

\[(6.12) \text{ John's car is the same car as Bill's but they are not the same number.}\]

is surely true. The Fregean analysis seeks to analyse both in terms of the same relation and this has a certain amount of initial implausibility, which might, however, be entirely superficial and could scarcely be more worrying than the univocity of 'same' in the function thesis. The relations '\(\xi\) is a left-handed brother of \(\eta\)' and '\(\xi\) is a red-haired brother of \(\eta\)' are different in content and extension and yet both may be similarly analysed: the first as '\(\xi\) is left-handed & \(\xi\) is a brother of \(\eta\)' and the second as '\(\xi\) is red-haired & \(\xi\) is a brother of \(\eta\)'. As Perry puts it:

---

\(1.\) I shall return to the question in \(\#10.3\).
If we take the relation to be what is expressed by any open sentence having more than one argument position, then different relations are involved [in (6.12), for example]. But if we recognize that many such open sentences express something complex, only part of which is relational in a straightforward sense, we may claim the relations expressed are the same.

For contrast Perry considers 'ξ is a better golfer than η' and 'ξ is a better swimmer than η' both of which are different in content and extension and which do not analyse into 'ξ is a golfer & ξ is better than η' and 'ξ is a swimmer & ξ is better than η'. The question is: Which is 'ξ is the same K as η' more like, 'ξ is a left-handed brother of η' or 'ξ is a better golfer than η'?

One test which Perry gives to help us decide is the following (though I'm not sure how much weight he wishes to place on it): 'it does not follow from "x is a better golfer than y" and "x is a swimmer" that "x is a better swimmer than y"',2 whereas 'it follows from "x is a left-handed brother of y" and "x is red-haired" that "x is a red-haired brother of y"'.3 Does the parallel inference for 'a is the same K as b' go through or not? There are strong grounds for saying that it does not: from 'a is the same type word as b' and 'a is a token

---

1. Identity, p. 24. The examples are from ibid., pp. 24-25; see also Perry, 'The Same F', Philosophical Review, vol. 79, 1970, pp. 183-184. Interestingly enough, although Perry is arguing against (R), his comments generate a case of (R): for in his first sense of 'relation' there are two relations in (6.12), whilst (if he's right about the Fregean analysis) in his second sense of 'relation' there is only one.

2. Identity, p. 25; 'The Same F', p. 185.

3. Ibid.
word' it does not follow that 'a is the same token word as b'.
Clearly, the inference fails if (R) is true, but not if it is false.

If we accept absolute identity theory and wish to encompass the relative identity statements of natural language within it then we have to accept either the Fregean analysis or some comparable principle to analyse relative identity statements into absolute ones. To my knowledge the Fregean analysis is the only such principle that has been proposed. If the absolute theory has to rely on the Fregean analysis, this will surely count against the theory since, as we've seen, the Fregean analysis at best is not universally applicable and thus we won't be able to use it to fit all relative identity relations into the absolute theory, and, moreover there seems to be no non-arbitrary way to fix the limits of its applicability. Perry, for example, clearly accepts the principle but only argues for it through an argument in favour of the absolute theory. On a (D)-relative identity theory the choice seems to be open. Wiggins rejects the analysis on the independent ground of the alleged sense-deficiencies of absolute identity claims.¹ On the other hand, if the (D)-relativist accepts the analysis then his (D)-relativism becomes a mere notational embellishment of the absolute theory. In such circumstances it is difficult to see what

¹. *Identity and Spatio-Temporal Continuity*, p. 28. (Wiggins' grounds for this choice will be discussed in Chapter Seven.)
appeal the (R)-relative theory has.

Finally, on an (R)-relative identity theory the Fregean analysis has to be rejected on pain of contradiction. For if we can analyse \( a =_K b \) as \( K(a) \& K(b) \& a = b \) then, for reasons of symmetry, we should accept \( K(a) \& K(b) \& \sim(a = b) \) as an analysis of \( a \neq_K b \). We do not, however, have to accept it as an analysis of \( \sim(a =_K b) \) which could be analysed as \( \sim K(a) \lor \sim K(b) \lor \sim(a = b) \). Indeed, if we wish to use the Fregean analysis to reduce relative identity and distinctness statements to absolute identity and distinctness statements we shall have to employ both halves of the analysis. Failure to do that would simply show that the absolute identity theory was inadequate for expressing natural language identity statements. There is no difficulty in doing this with a case of (R) such as \( a =_K b \& \sim(a =_J b) \) since this might be analysed as \( K(a) \& K(b) \& a = b \& (\sim J(a) \lor \sim J(b)) \) which gives rise to no contradiction. But if we have

\[(6.13) \quad a =_K b \& a \neq_J b \]

as our example of (R), then we have to analyse this, if we are to analyse it at all, as:

\[(6.14) \quad K(a) \& K(b) \& J(a) \& J(b) \& a = b \& \sim(a = b) \]

1. See, also, \( \text{110.1} \), below.
To avoid the contradiction\(^1\) it is necessary to avoid analysing (6.13) in this way, by adding the principle:\(^2\)

\[
(D_0) \quad \text{Either statements of the form 'a }\equiv_K b' \text{ do not analyse into 'K(a) }\& K(b) \& a = b'; or statements of the form 'a }\not\equiv_K b' \text{ do not analyse into 'K(a) }\& K(b) \& \sim (a = b)' .
\]

There is no reason to prefer one disjunct of (D\(_0\)) to the other and so both should be ruled out on an (R)-relative identity theory.

Whilst dealing with the Fregean analysis we may note a concession to it made by Dummett. Dummett rejects the analysis\(^3\) but is prepared to concede that if 'F' and 'G' convey the same criterion of identity then 'a }\equiv_F b' can be analysed as 'F(a) }\& F(b) \& a }\equiv_G b'.\(^4\) I shall call this the Dummett analysis. This is entirely acceptable since it is difficult to see how this analysis could fail when 'F' and 'G' convey the same criteria of identity (i.e., are co-ordinate). But Dummett believes

---

1. There is another way of getting the same contradiction even if we don't accept the second half of the Fregean analysis. If we accept the first half of the analysis and if we use (LL) as an analysis of the absolute identity statement the Fregean analysis produces, then we can derive Wiggins' formula (1.13) which, as we saw in ¶1.5, is incompatible with (R). (If we reject (LL) as an account of the absolute identity statement produced then our use of the Fregean analysis has been in vain, since we will have done nothing to vindicate the absolute theory.)


3. Frege, p. 74.

4. Ibid., pp. 75, 552.
that two terms convey the same criteria of identity when one restricts the other. Whilst this seems to me to be false it does suggest the following principle, analogous to (4.3), and independent of a thesis about when terms convey the same identity criteria:

\[(6.15) \quad (K \subseteq J \& a =_K b) \rightarrow (a =_J b \& K(a) \& K(b))\]

(6.15) has some plausibility for we would be inclined to agree that 'a is the same philosopher as b' is correctly analysed as 'a is a philosopher & b is a philosopher & a is the same person as b'.

Even Geach might have something like (6.15) in mind when he says:

I did not give 'is the same Greek as' and 'is the same man as' as expressions for two different forms of relative identity;... Naturally not; for 'is the same Englishman as y' (say) simply means 'is the same man as y and is English.'

Geach cannot mean that 'ξ is the same Greek as η' and 'ξ is the same man as η' are the same relative identity relation for they have different extensions and are thus different relations. Moreover, the analysis he gives implies that they are distinct, for relations 'R₁(ξ,η)' and 'R₂(ξ,η)' must be distinct if 'R₁(ξ,η)' analyses as 'R₂(ξ,η) \& p' (for non-tautologous 'p'). Finally, (6.15) cannot be what Geach has in mind because (6.15) is false and some of the counter-examples to be raised against

1. 'A Reply', p. 556.
it are due to Geach. We have already defined the sense of 'official*' (in which to be the same official* is just to hold the same office). Now official*s are persons (not longer-lived things of which persons are parts) and thus 'official*' restricts 'person', yet it is not the case that 'a is the same official* as b' entails 'a is the same person as b'. Similarly, to use one of Geach's examples, we may define 'a is the same surman as b' as 'a and b are men and a has the same surname as b'. It follows, despite denials from Perry and others, that 'surman' restricts 'man' (it does not follow, incidentally, that they are co-ordinate for being a man does not entail having a surname) yet clearly being the same surman does not entail being the same man. What Geach must have intended in the passage just quoted is that we do not get different answers to the question 'Is this the same as that?' if we use

1. With the case of 'x is a good K' Geach explicitly rejects the equivalent of (6.15): 'tennis stroke' restricts 'human action' but 'x is a good tennis stroke' does not entail 'x is a good human action'. (Cf. 'Good and Evil', p. 40.) There is every reason for an (R)-relativist to reject such an account in the case of identity also. It is for this reason that I'm inclined to doubt whether Geach believes that two sortals convey the same identity criteria when one restricts the other - although, he may hold, as I do, that such restriction is a necessary condition for their conveying the same identity criteria. (See above, pp. 89-92.)

2. 'Identity', p. 10; 'Ontological Relativity and Relative Identity', p. 10. See §8.3 for a fuller discussion of what Geach attempts to do with this example.

'Greek' as covering concept or if we use 'man'.

I think these examples help us to get clearer about the Dummett analysis and its associated principle (6.15). In the first place (6.15) is false, but this doesn't allay our suspicion that some similar formula ought to be true (though without '$K \subseteq J$' as part of the antecedent). What the correct principle ought to be I'll now try and suggest. Every relative identity statement has at least one Dummett analysis - obviously, since '$a =_K b$' can be trivially analysed as '$K(a) \land K(b) \land a =_K b$'. Now in each Dummett analysis of '$a =_K b$' two (possibly identical) general nouns will appear: '$K$' in the analysandum and (say) '$J$' in the analysans (where maybe '$K \approx J$'). If, in a particular Dummett analysis of '$a =_K b$', '$K$' restricts the general noun '$J$' which appears in the analysans then the following holds:

\[(6.16) \quad a =_K b \iff a =_J b.\]

This copes with the difference between the Dummett analysis which defines '$a$ is the same surman as $b$' and that of '$a$ is the same philosopher as $b$', for 'surman' does not restrict 'surname' whilst 'philosopher' does restrict 'person'. This concession to the Fregean analysis, however, is of no help to those who which to rewrite relative identity statements as absolute identity statements, or to those who wish to rule out (R).

---

1. This is the conclusion that Carl Calvert comes to after a long and careful discussion. Cf. his Relative Identity: An Examination of a Theory by Peter Geach, (Unpublished Doctoral Dissertation, University of Washington, 1973), pp. 63-76.
Alternative (D)-Theses. Amongst those philosophers who reject (R) but accept (D) there is little uniformity of opinion as to the type of incompleteness suffered by absolute identity statements and its consequences. In this section I shall deal with some of the 'minor' versions of (D) mainly to get them out of the way in order to deal with what might be called Wiggins' 'developed' theory in the next chapter. Nonetheless, several of the theses considered here are due to Wiggins, though it's clear that he gives them very much less weight than the thesis to be considered in Chapter Seven.

Wiggins once accepted only a very weak version of (D) which he expressed as follows: 'After an assertion that A is the same as B we can usually ask "the same what?".'¹ Ten years later he expressed the point more strongly:

If someone tells you that \( a = b \), then you should always ask them "the same what as \( b \)?"²

In the later formulation the 'usually' has become 'always' and the 'can' has become an imperative. The earlier version is too

---


2. Identity and Spatio-Temporal Continuity, p. 1. See also G.E.M. Anscombe, 'Aristotle', in Anscombe and Geach, *Three Philosophers*, p. 33. But compare Wiggins, 'The Individuation of Places and Things', *Proceedings of the Aristotelian Society*, Supplementary Volume 37, 1963, p. 178, where he says that the covering concept needn't give 'a natural or idiomatic answer to the question "same what?"' - which, I suppose, leaves it open that it must nonetheless give some answer to that question.
weak to be properly counted a form of (D) as (D) must, I think, imply that any identity statement which wasn't backed by the appropriate general noun, for which (in the terminology of the present version) the 'same what?' question couldn't be answered, would be defective. There is no suggestion of this in Wiggins' first version. The second version is equally unenlightening. Despite the fact that Wiggins says at the outset of *Identity and Spatio-Temporal Continuity* that this is what he will call (D), it can scarcely be an adequate characterization of the doctrine. As M.C. Bradley says, (D) is not a categorical imperative.¹

Wiggins also claims that this doctrine is found in Hampshire's 'Identification and Existence'.² Alas, he gives no page reference and so I can't be sure that I have chosen the passage he has in mind, but out of the whole paper the following seems to get closest to Wiggins' view:

It is a further requirement that, attached to any [noun] phrase which occurs in a direct identification, there is some principle of individuation; for in answering the question 'What is that?', or 'What is that so-and-so?', the speaker must have some way of marking as a unit the object referred to. It follows in general that, if there is no principle of individuation attached to a noun ... phrase, one can infer that the noun ... phrase in question cannot enter into a direct identification; for one necessary condition of interpreting the extra-linguistic reference is lacking.³

---


It isn't quite obvious that Hampshire is here doing the same thing as Wiggins. In his first sentence Hampshire appears to be setting an adequacy condition on what a sortal is or can do. In the second sentence he claims that if a noun phrase does not convey principles of individuation (i.e., is not a sortal) it cannot enter into direct identifications. Hampshire seems to be going somewhat beyond Wiggins at this point. A perfectly good answer to the 'same what?' question would be 'same thing'. Wiggins also, as we shall see, would restrict the answer to sortals but there is nothing in his present way of stating (D) to effect the appropriate exclusions. It is also not clear that sortals would operate in Hampshire's theory of identification in quite the same way as they do in Wiggins', even though Hampshire does go on to say that 'to identify something is precisely to pick out and to indicate something noticed in our experience as directly falling under a certain concept.' What their role might be may become clearer in §7.4.

In a section entitled 'The Rationale of the "Same What?" Question' Wiggins gets a bit closer to turning his version of (D) into a serious logical thesis. He writes:

\[ \text{[T]here is something radically wrong with any putative assertion of identity for which in principle no such answer [as } '(\exists x) a =_x b' \text{ to the question 'a is the same what as b?'} \text{] could be provided.} \]

1. Ibid., p. 208.

2. Identity and Spatio-Temporal Continuity, p. 27.
This leads him to the claim that

\[(6.17) \quad a = b \supset (\exists x) a =_x b\]

Of course, if a and b are the same they must be the same something and we can ask 'the same what?' and there would be something radically wrong with an identity claim for which no answer to this question could in principle be given. At best, however, this gives us (6.8) and not (6.17), for to get to the latter we need also some account of why only a sortal is fit to answer the 'same what?' question. (Presumably Wiggins would do so in terms of his basically Aristotelian account of sortalhood.) Moreover, if we adopt the strong (D)-thesis of Wiggins' 'developed' theory, according to which absolute identity claims are senseless, then (6.17) and (6.8) will alike be senseless since they are truth-functional compounds with a senseless

1. Ibid., p. 28.

2. The principle is not so trivial as has sometimes been claimed, since it apparently rules out cross-sortal identity statements. It thus provides a prima facie (but to my mind only a prima facie) argument against the brain-mind identity theory. Cf. Gilbert Ryle's review of Quinton's The Nature of Things, New Statesman, vol. 85, 1973, p. 504. The principle also poses problems for such statements as 'That speck on the horizon is (identical with) the QE2' which are discussed by J.M. Hinton in 'Perception and Identification', Philosophical Review, vol. 76, 1967, pp. 421-435; and mentioned by Austin in Sense and Sensibility, (Oxford: Clarendon Press, 1962), p. 98n and by Hampshire in 'Identification and Existence', p. 201. And, of course, for metaphysically motivated category mistakes such as Keats' 'Beauty is Truth' and Parmenides' 'Thought and Being are the same'.

3. See Identity and Spatio-Temporal Continuity, p. 28; and above, ¶3.1.
component. Probably Wiggins hopes to counter this problem by some distinction between relative and absolute identity languages but he doesn't make this clear.

Geach gives the following account of his position in reply to criticisms by Fred Feldman:

I deny that any one relation ... is the relation expressed by 'is identical with'. My whole thesis was that 'is identical with' expressed now one, now another, relation, according to the context of utterance.¹

This account of Geach's enterprise is disingenuously wide. It is not the whole of Geach's thesis that 'ξ is identical with η' expresses different relations depending upon the context of utterance. The version of (D) to which Geach wants to adhere makes 'ξ is identical with η' relative to the context of utterance in a certain way: i.e., the context is to provide a general noun such that one thing is said to be identical to another with respect to that noun. As we've seen², this is not the only way in which the concept of identity may be broken up. This is not the whole trouble. Geach started³ by wanting to claim that 'ξ is identical with η' lacked clear sense. He is now claiming that it expresses a whole variety of relations, depending on context. This, at worst, amounts to ambiguity and it doesn't seem to me that an ambiguous expression can be called senseless: rather it has a superfluity of senses. Of course this would fit well with the account of (D) we gave in

¹. 'A Reply', p. 556.
². See above, p. 10.
³. In 'Identity', p. 3, the article which provoked the criticisms to which Geach is now replying.
(D.I) but it does not go beyond it.

Odegard rejects the following version of (D):

(6.18) The statement 'a = b' is elliptical for a statement of the form 'a =ₜ b'.¹

To give this the force Odegard wants it to have I think it should be amended to read 'is always elliptical' instead of just 'is elliptical'.² It is a thesis he ascribes, with slight inaccuracy, to Geach. Odegard objects to (6.18) - at least to its amended version - on the grounds that it is not the case that

...everyone who truly (or even knowingly) asserts '(T(a) & T(b)) & (a = b)' either says or means '(T(a) & T(b)) & (a =ₜ b)'. For example, he might accept the [third] conjunct on authority, without knowing whether its truth is based on 'a =ₜ b'. And he could at least raise the question of whether this is so, which is something he could not do if 'a = b' simply meant 'a =ₜ b'. Thus according to Locke's theory if '(T(a) & T(b)) & (a = b)' is to yield 'a =ₜ b', it must be augmented by either 'a =ₜ b' or an instance of 'a =ₜ b' in which the value ofₜ is semantically tied to T, whereas for Geach the [third] conjunct must be understood as meaning one of these two things.³

There are two ways of taking this point. Firstly, Odegard might be claiming that someone who truly and knowingly asserts

¹ 'Identity Through Time', p. 30.
² There is textual support in Odegard for the amendment. He says, e.g., that the theory he is espousing 'recognizes that "T(a) & T(b) & a = b" may be elliptical' (ibid.) And all his arguments are against the stronger thesis.
³ Ibid.
(6.19) \( T(a) \& T(b) \& a = b \)

may not mean

(6.20) \( T(a) \& T(b) \& a =_{\tau} b \)

because he means

(6.21) \( T(a) \& T(b) \& a =_{S} b \).

This point would be undeniable and it would give Odegard no quarrel with Geach since Geach does not insist that the third conjunct of (6.19) 'must be understood as meaning' the third conjunct of (6.20). But Odegard doesn't interpret Geach in this way, rather he ascribes to Geach the view that the third conjunct of (6.19) 'must be understood as meaning' either the third conjunct of (6.20) or some (other) instance of 'a =_{\Delta} b'.

Odegard's point is thus: Someone who truly and knowingly asserts (6.19) may not mean either (6.20) or (6.21).

There are still a number of points here which need disentangling. First, has Odegard got Geach right? What Geach presents is not just one account of absolute identity statements but a disjunction of alternatives: either they are meaningless or, if they have a meaning, the meaning is some instance of 'a =_{\Delta} b'. However, Odegard's point about ordinary

---

1. Cf., for example, 'Identity', p. 3; Reference and Generality, p. 39; Mental Acts, (London: Routledge and Kegan Paul, 1957), p. 69. (The fact that Odegard limits completions to sortals and Geach to substantival terms is irrelevant for the question at issue. Additionally I'm not sure what Odegard means by 'semantically tied' but I suspect it may impose a stronger restriction on choice of covering concept than Geach would allow.)
usage, if correct, will also work against this disjunctive version of (D). For Odegard supposes that someone truly asserts 'a = b' but does not say or mean some instance of 'a = \_ b'. Thus the second disjunct of Geach's account is failed; but so, also, is the first because if 'a = b' is truly asserted then it is not meaningless. Thus the speaker supposed by Odegard when he truly asserts 'a = b' neither asserts something meaningless nor says or means some instance of 'a = \_ b'. To this Geach will have to reply that there could be no such case: that if the speaker did not say or mean some instance of 'a = \_ b' then what he said was meaningless, and therefore not truly said.

On Odegard's side we can surely agree that people can, on occasion, sensibly assert 'a = b' without thereby intending an instance of 'a = \_ b' - indeed most philosophers did this before reading Geach (and many of them afterwards)! Whether such asserters of 'a = b' could, nonetheless, mean an instance of 'a = \_ b' depends on the possibility of meaning something without intending to mean it (a dubious supposition). Pursued this way Geach's version of (D) runs into dangerous territory. However, it may be that what Geach is saying is that although someone can significantly assert 'a = b' without meaning or saying or intending to mean or say an instance of 'a = \_ b' nonetheless 'a = b' can be written out as an instance of 'a = \_ b'. But in this case Geach's thesis merely collapses into (6.8)\(^1\). In fact the situation is worse than this for (6.8)

---

1. In fact, the version of (6.8) with sortal covering concepts.
does not convey the lack of sense of 'a = b' which Geach intended to convey - and, if (6.8) is to make sense itself, 'a = b' must make sense. Moreover, on this interpretation there would be no quarrel with Odegard who accepts (6.8). So a more careful reading of Geach doesn't help him out of this difficulty. However, a more careful reading of Odegard might.

When Odegard implies that someone might truly and knowingly assert (6.19) without meaning (6.21) he might mean that they can do so without meaning that there is some sortal covering concept or other; or without meaning that there is some particular sortal covering concept (that is, without their having in mind some particular covering sortal). Odegard accepts the thesis:

\[(6.22) \quad a = b \equiv (\exists s)a =_s b\]

and also:

\[(6.23) \quad \text{[T]here is a reason for the truth of 'a = b' and ... a statement of the reason will take the form of 'a =_s b'.}^1\]

Now for each of (6.22) and (6.23) we can try and generate a difficulty for the first interpretation of what someone who truly asserts 'a = b' means. How could one, it might be argued, truly assert 'a = b' without thereby meaning '(\exists s)a =_s b' given that (6.22) is true and, moreover, is (presumably) a logical truth? But this argument involves a distribution fallacy. It is possible for x truly to assert p, where \(\square(p \rightarrow q)\)

---

without x thereby meaning (or even truly asserting) q. Of course, if p is truly asserted then q is there to be truly asserted, but if x truly asserts p it doesn't follow that he truly asserts q. So the attempt to use (6.22) to undo Odegard's argument is a failure, but the second difficulty is, I think, more successful. How could one knowingly assert 'a = b' without thereby meaning '(∃4)a =₄ b', given that (6.23) is true? For surely knowingly to assert p is to know the reason for p's being true. Thus if x knowingly asserts 'a = b' then x knows that '(∃4)a =₄ b' is true, and if he knows that then isn't that what he means all along? This might be disputed, but what we can surely agree on is that in this case substituting '(∃4)a =₄ b' for 'a = b' would preserve intended sense, and it is this, as Odegard recognizes, which is crucial.

On the first interpretation also, Odegard runs into another problem. His argument to show that 'a = b' and some instance of 'a =₄ b', say 'a =₃ b', don't have the same meaning is invalid. Even if 'a = b' and 'a =₃ b' do mean the same someone who truly asserts 'a = b' may raise the question as to whether it was the case that 'a =₃ b'; just as someone (who didn't understand English very well) might enquire whether a certain bachelor was unmarried or someone decoding a cipher might enquire whether a certain ciphered phrase meant so-and-so. Of course, such questions turn out to be about meanings (although the questioner mightn't think so) but we don't know whether the question 'Is it true that a =₃ b?' is a question about the meaning of 'a = b' until the present problem is resolved. But even if meanings are the same there's nothing to stop the question's being raised. The possibility of raising the question...
does not show that the two statements must have different meanings.

On the second interpretation Odegard is right, but he imposes much stronger conditions on the (D)-thesis than Geach would accept. People do on frequent occasions truly assert statements of the form (6.19) without having in mind any particular sortal covering concept. But (D) is a logical thesis about identity and not a thesis about the psychology of identity statement asserters. To truly assert p is not to have in mind all synonyms of p. I don't think this argument touches Geach's thesis. The most (D) can do is provide, for every meaningful assertion of 'a = b' (however vague its meaning is), an identity statement which captures that meaning and satisfies the demand for a covering concept. Odegard does not manage to show that Geach's (D)-thesis fails to do this.

Our discussion of Odegard's argument is necessarily inconclusive since neither Odegard nor myself have given any account of what we mean by 'meaning' and, in particular, neither of us have suggested distribution laws for the operators Odegard uses in his argument, such as 'x means' or 'x truly asserts'. All this would have to be done before we could be sure that Geach's claims held about natural language. We need much less, however, in order to be sure that a relative identity theory subject to Geach's (D)-thesis could express without change of sense all meaningful natural language identity statements. Odegard's argument does not show that such a theory fails this condition. Moreover, it must be admitted even by Odegard, that the cases he refers to must be secondary whilst cases in which the speaker not only knows what he is saying but also the
reason for saying it must be central - we can't speak vacantly all the time. It may be best to see a theory of relative identity as an account of all these central cases. Possibly such a theory would be able to capture the others and even, with the addition of new rules, be able to provide a grammar for them. But I think an account of the central cases is a sufficiently ambitious undertaking for such a work as this. We will approach such an account from a slightly different angle in the next chapter.
CHAPTER SEVEN

WIGGINS' (D)-RELATIVE IDENTITY THEORY

7.1 Wiggins' Theory. It is Wiggins who takes most seriously the question of the independent justification of (D). However, in this enterprise, as throughout his book, the (D) he seeks to justify behaves like a poltergeist, mysteriously changing form from page to page. Wiggins' most general statement is:

On pain of indefiniteness, every identity statement stands in radical need of the answer to the question same what?¹

The trouble with this is that we want to know in what sense 'a = b' is indefinite and, as Bradley says, 'what is painful about it'?² Bradley compares the alleged indefiniteness of 'a = b' with the indefiniteness of 'Jack is to the right'.³ But the analogy, on its own, doesn't get us far for whilst 'Jack is to the right' (when context provides no point of reference) is universally bewildering, it is not universally agreed that 'a = b' (when context provides no covering concept) is bewildering at all.

Sheehan at least informs us of the nature of the indefin-

¹ Identity and Spatio-Temporal Continuity, p. 27.
² 'Critical Notice', p. 70.
³ Ibid., p. 73.
iteness in his characterization of (D):

'a = b' is indeterminate in sense until a sortal 'S' is supplied.1

But he argues for this on the basis of (R). What Wiggins wants is some argument to Sheehan's conclusion which is not based on (R). The argument (or arguments) he proposes in the second part of Identity and Spatio-Temporal Continuity are implicitly based on the verification principle. He presents three rather different, but related, theses about 'a = b':

The following [is a] truth-condition, T, for an identity-statement 'a = b'. If one locates each of the particulars a and b ((under covering concept or concepts)) and, where appropriate, sc. in the case of 'identity through time', traces a and b through space and time ((under covering concepts)), one must find that a and b coincide ((under some covering concept S)) ... What particularly needs to be shown is the essential character of the parts of T marked by [double] brackets.2

Knowledge of relevant S ... is both necessary and sufficient for the simultaneous understanding of what a is, of the sense of the question 'is a the same as b?' and of what establishes or refutes the assertion that a is indeed the same as b.3

There is not, and there could not be, any general account of what it is for an arbitrary individual a to coincide or not to coincide with an arbitrary

1. 'The Relativity of Identity', p. 11. Sheehan's point could, of course, be generalized to admit other types of covering concept.

2. Identity and Spatio-Temporal Continuity, p. 35.

3. Ibid., p. 36.
individual b, nor could there be any usable account of what it is, in general, to make a mistake or avoid a mistake in tracing a and tracing b to see whether they coincide. To trace a [and b and see whether they coincide] I must know what a is.¹

The overall effect of these three quotations is likely to be more than a little puzzling. In the first place, the third quotation is concerned only with identity through time for items for whose identity spatio-temporal continuity is criterial (that is, presumably, for material objects), and this is the only sort of identity which the first quotation explicitly deals with (although it does leave room for the treatment of identities for which other conditions are criterial). Of course, the identity of material objects is what Wiggins is mainly concerned with - his title alone suggests this - but in formulating a theory of relative identity we will need to expand our scope beyond this if the theory is to command respect. In particular, no general conclusion about identity statements (such as (D)) will follow from considerations about material object identity through time.

¹. Ibid., p. 35. It should be noted about these passages, and about Wiggins' treatment as a whole, that he assumes only sortals can act as covering concepts, and is, in fact, prepared to be even more restrictive than that by excluding all but privileged or substance sortals. Since the passages cited obviously require identity completions to be by general nouns which convey identity criteria, i.e., substantival terms. Henceforth, choice of general noun constants and variables will be determined by this fact.
Secondly, in the first quotation T is not a truth-condition in the usual sense of the term for it seems clear that Wiggins believes that a truth-condition for the statement 'S' should indicate the manner in which one might go about verifying or falsifying 'S'. In other words, in Wiggins' usage a truth-condition for 'S'. To avoid confusion let me call this a criterial condition for 'S'.

What Wiggins is talking about in the first and third quotations are criteria of identity, and we can generalize what he says so that the principle which results is not restricted to the identity of material objects. The result for the first quotation would be something like:

\[(7.1) \text{ The criterial condition for '}a = b\text{' must provide an operational criterion by which we may (in ideal circumstances) judge whether }a = b, \text{ and this can only be done if we can provide a substantival covering concept for '}a = b\text{'.}\]

Without the claim in italics (7.1) is merely a tautology, to the effect that criterial conditions must be criterial. What the italicized phrase adds is the claim that Wiggins added in double brackets in the original quotation. A similar process for the third quotation gives us:

\[(7.2) \text{ There is not, and there could not be, any general account of what it is for a to be identical with b, nor could there be any usable account of what it is, in general, to make a mistake or avoid a mistake in judging whether }a = b.\]

What this amounts to is the old claim of Chapter Four that identity is differently constituted for different types of items and that, as a result, the criteria of identity for different types of items are different. From (7.2) we can move to
(7.1) for if identity criteria are different for different types of item then we need to know what type of item a and b are before we can know the criterial condition for 'a = b' and this is, of course, exactly what the provision of a substantival covering concept for 'a = b' tells us. (In fact, however, we are not quite there, for (7.1) requires that provision of a substantival covering concept is the only way in which this can be done and we shall, in ¶7.4, have reason to consider another possible method.)

We can set this principle up, quite properly, as a version of (D):

(D.II) It is only possible to judge whether an identity statement, 'S', is true or false when 'S', is, or can be, supplied with a covering concept.¹

(D.II) captures the idea that an identity statement cannot be assessed unless it has a covering concept which supplies it with criteria of identity. Clearly only substantival covering concepts will remedy this indeterminacy.

In the second of the three quotations, however, Wiggins goes considerably beyond (D.II) for he claims there that knowledge of an appropriate covering concept is both necessary and sufficient for understanding what a is, and what the question 'Is a the same as b?' means, as well as resolving the indeterminacy of 'a = b'. The first of these claims I shall discuss

¹. Geach also accepts (D.II). See his claim: 'I maintain that it makes no sense to judge whether x and y are the "the same" ... unless we can add or understand some general term - "the same F."

(Reference and Generality, p. 39; my italics.) Such a principle would follow from the function thesis.
in more detail later, but it does seem to me that Wiggins is using a somewhat deviant sense of 'knowing what a is' when he claims that knowledge of some substantival term under which a falls is both necessary and sufficient for it. I think it would naturally be taken that knowledge of some covering general noun was necessary for knowing what a is, but I would be surprised if such knowledge was, in general, sufficient.

The second claim is equally curious. There has been, so far, no suggestion from Wiggins that we do not understand the meaning of 'a = b', merely that we have no way of assessing whether it is true or false. Now standard English transformations should be sense-preserving and since 'Is a the same as b?' is a standard transform of 'a is the same same as b' we would expect the one to be significant if the other were. Wiggins is claiming that we do not understand the sense of the question unless we can provide a covering concept for the statement. It surely follows that we can't understand the statement either, unless we provide a covering concept.¹ It is plain from the context in which the second passage occurs that Wiggins thinks this claim is sufficiently supported by (D.II). If (D.II) gives him:

\[(7.3)\] We can in principle judge whether 'S' is true or false iff we can supply a covering concept for 'S'.

then he can get

---

¹ Wiggins, so far as I can see, does not say as much in so many words though other (D)-relativists have gone this far, e.g., Michael Durrant, 'Numerical Identity', p. 100. Quite a bit of what Wiggins says, however, implies this position.
We can understand what 'S' means iff we can supply a covering concept for 'S'.

only if he has a second premiss:

We can understand what 'S' means iff we can in principle judge whether 'S' is true or false.

But (7.5) is a verification principle which Wiggins does not explicitly avow and which, I think, ought to be rejected.

Given that this appeal to the verification principle cannot be allowed we are left, at best, with (D.II) which imposes an assessibility condition on identity statements. I don't think it will be possible for Wiggins to move from (D.II) to a stronger (D)-thesis, such as Sheehan's, without introducing either a verification principle or some further relative identity principle, such as the function thesis.

In ¶7.2 to 7.4 I shall consider the objections which might be raised against even (D.II). But first we should note that it ought to be hedged round with the various caveats and qualifications that were noted in ¶6.2 in connection with (D.I). Subject to these qualifications, I think Wiggins is right in asserting that identity statements cannot be assessed until some substantival term is given, but he is wrong (as will shown in ¶7.4) in thinking that it must be given as covering concept.

¶7.2 Bradley's Criticisms of Wiggins' Theory. In his critical notice of Wiggins, Bradley puts forward an argument which seems to trade (if I have understood it aright) upon Wiggins' hovering between (D.II) and (7.4). Bradley effectively adopts as an 'obvious truth' the principle:
(7.6) To decide whether \( a = b \) we must know what the names in question refer to and this involves knowing that \( a \) is the \( F \) which... and \( b \) is the \( G \) which....

Bradley then goes on to object that if this leads to (what he calls) Wiggins' indefiniteness thesis then the indefiniteness affects not just identity statements but 'any sentence in which a predicate is attached to a proper name.' This spread of indefiniteness is, he claims, 'intolerable' and thus he supposes that the 'obvious truths [viz. (7.6)] will not immediately yield' Wiggins' indefiniteness thesis.

Bradley and Wiggins are at cross-purposes here. (7.6) effectively concedes (D.II) which is the most to which Wiggins is entitled to. Now if we accept (7.6) it does not seem 'intolerable' that this sort of indefiniteness (viz. indefiniteness of assessibility) should spread to sentences in which a predicate is attached to a proper name, for statements of the form '\( \phi(a) \)' are generally not assessible unless we know what \( a \) is. But if we took (7.6) to commit us to the stronger version of (D), namely, the sense-indefiniteness thesis (7.4), then we

1. This principle is not stated by Bradley in so many words but it seems a fair generalization of his examples on p. 75 of his 'Critical Notice'. In fact (7.6), which requires identification of the relata of an identity statement, is stronger than (D.II) which merely requires knowledge of a sortal under which both relata fall. (7.6) is clearly a sufficient condition for (D.II), though it is not a necessary one.

2. Ibid. Perry (Identity, p. 81) has the same argument but uses it to different ends.

would expect this sense-indefiniteness to spread far and wide also; and this would be counter-intuitive for we would not normally say that \( \phi(a) \) was meaningless or lacked determinate sense simply because we did not know a substantival term under which a fell. So when Bradley says that Wiggins' sense-indefiniteness thesis cannot follow from (7.6) he is, in an unnecessarily convoluted way, rejecting the verification principle which would get him from (D.II) to (7.4). If we reject the verification principle then there is no danger of sense-indefiniteness spreading throughout the language.

Let us now consider the assessibility-indefiniteness that is common ground to both Wiggins and Bradley as far as \( 'a = b' \) is concerned, and which Bradley claims spreads elsewhere. Having accepted (7.6) there is, so far as I can see, no reasonable policy Bradley could adopt to stop it spreading, but then it is not clear why he needs to stop it spreading. To claim that \( \neg(\phi(a)) \) cannot be assigned a truth-value until we know a substantival term under which a falls, so far from being wildly counter-intuitive, has some plausibility. It is not, however, quite correct. Firstly, we must make some exceptions which remain within the spirit of the claim: We can obviously assign a truth-value to any predicational statement which is analytically true or false without knowing a substantival term under which its subject falls. We know that 'This is either red or not red' is true without knowing what 'this' refers to. Cases of this sort are paralleled by the identity statement \( 'a = a' \) which we know to be true without knowing a covering concept. Exceptions of this sort, however, would not, I suspect, unduly trouble Bradley, although Wiggins might be perturbed about the
exception that 'a = a' constitutes to (D.II). But there are other exceptions which seriously limit Bradley's claim. For example, we can assign the value false to 'The object in the matchbox is a live elephant' without knowing any substantival term under which the object in the matchbox falls. Bradley's claim might be limited to the position that generally, or in normal circumstances, 'φ(a)' cannot be assigned a truth-value until we know a substantival term under which a falls - but it is hard to see what this proviso amounts to.

In the light of this we need to reassess the whole of Bradley's argument. He holds that (7.6) is an obvious truth about the assessibility-indefiniteness of absolute identity claims and (by parity of reasoning to his original argument) it follows from this that assessibility-indefiniteness will spread to all predicational statements. Originally, this looked like a reasonable claim but we have now shown it to be false. If Bradley's argument is valid it would follow (modus tollens) that (7.6) and thus (D.II) are false also. Neither Bradley nor Wiggins wants to draw this conclusion and they are saved from doing so because Bradley's argument is invalid as it stands. To make it valid would require the addition of some principle which enabled one to generalize from a claim about the criterial conditions of a certain type of statement to a claim about the criterial conditions of all types of statements. I am at a loss to know how such a principle might be formulated, or, supposing it formulated, why we should regard it as true. There thus seems little reason to fear an 'intolerable' extension of assessibility-indefiniteness and
every reason to expect a slight one.\(^1\)

Bradley has another argument against a claim which he takes from Wiggins and characterizes thus:

\[(7.7) \text{ Coincidence can only be defined and therefore assessed by reference to a suitable sortal.}\(^2\)

Bradley proposes the following alternative assessment condition for \(a = b\):

\[(7.8) (\forall t)[(r)(a \text{ occupies } r \text{ at } t) = (r')(b \text{ occupies } r' \text{ at } t)], \text{ provided that } a \text{ is not a substance and } b \text{ any genuine aggregate of its parts, nor vice-versa.}\(^3\)

where \(r\) and \(r'\) are variables taking regions of space as values.

Wiggins has three arguments against the adequacy of (7.8):\(^4\)

\[\text{[H]ow can we know what it is to find } a \text{ in a place unless we have some [substantival] specification of what } a \text{ is?}\]

---

1. This is a conclusion which Dummett accepts right from the start: 'If ... I know that a river flooded last winter, but do not know what would establish that it was or was not the same river as that of which I am now being given the name [by being told, 'This is the River Windrush'], I shall not know, either, what would establish that it was true of the River Windrush that it flooded last winter.' (Frege, pp. 73-74.) It is precisely this sort of fact which makes identity criteria so important.

2. 'Critical Notice', pp. 74-75; cp. Wiggins, Identity and Spatio-Temporal Continuity, p. 35; fn. 44 (p. 72).

3. 'Critical Notice', p. 76.

4. Similar objections to (7.8) are found in Perry, Identity, p. 107.

5. Identity and Spatio-Temporal Continuity, fn. 44 (p. 72).
The assertion that a and b coincide must come to something more than the stale assertion that the location of a = the location of b. It is the occupants ... that must be the same. We must know not only what it is for location 1 to be occupied, but also what it is for 1 to be occupied by a.¹

The adequacy of (7.8) will depend upon the nature of the changes a and b can undergo. This in turn will depend upon what a and b are.²

Against each of these arguments Bradley uses the same reply: a repetition of his argument about the generalizability of non-assessibility. He argues that if we need to know a substantival term under which a falls before we can know what it is to find a in a place, or to distinguish a from the space it occupies, or to know what sort of changes a can undergo, we will have to know a substantival term under which a falls 'to find whether a has a mass of 5.47 grms'.³ But Bradley has yet to demonstrate that this follows. Moreover, whilst it will be possible to rig up cases in which we can tell whether a has a mass of 5.47 grms. without locating a under a substantival term, in many cases this will not be possible. Bradley's argument is not very strong.

However, (7.8) is defective in quite other ways. It is not sufficient for identifying a and b to know that they occupy exactly the same place at the same time, even if you include the

¹ Ibid.
² Based on Wiggins' (D.vi), ibid., pp. 35-36.
³ 'Critical Notice', p. 76.
proviso that neither is a part of the other. In many cases distinct things can occupy the same place at the same time whether or not they are parts and wholes of each other. For example, the electromagnetic field within an atom is co-extensive with the atom but distinct from it. Ghosts and walls are frequently averred to occupy the same place at the same time without being identical. Wiggins advances the principle:

No two things of the same kind (that is, no two things which satisfy the same sortal or substance concept) can occupy exactly the same volume at exactly the same time.¹

But even this is too strong: two smells may fill the room simultaneously yet be distinct, the one of curry and the other of fish; two light rays may intersect in a given volume yet be the one of red light and the other of blue; shadows may overlap; different sounds may simultaneously fill the air.² Space occupation provides no criterion for identification, even of physical objects. However, the Leibnizian examples suggest that even providing a substantival term under which both a and b fall and under which they spatio-temporally coincide is, generally, no sufficient condition for the assertion of 'a = b'. Nonetheless, it would seem to be a necessary condition for 'a = b' as far as material objects are concerned.

Nelson's Criticisms of Wiggins' Theory. It is Jack Nelson who proves to be the most persistent critic of Wiggins. He presents what he believes to be a counter-example to (D):

'It seems possible that I might hear my neighbours on various occasions, summon, scold, praise, curse and discuss Xantippe and Rufus, in such a way that it becomes clear that Xantippe is in fact identical with Rufus. And this might happen without its becoming clear what kind of a thing 'Xantippe' and 'Rufus' both name, i.e., whether that thing is a pet, child or poltergeist etc.'

Nelson's example is an extremely strange one and I would like some further elucidation before having to deal with it. How, for example, did Nelson come to be able to identify Rufus with Xantippe? Did he hear one neighbour describing the exploits of Xantippe and the other describing similar exploits by Rufus? But that is not enough to warrant the identity claim: Rufus and Xantippe might have similar behaviour problems. In a conversation between the two neighbours it might become clear that both were talking about the same thing, but this would be because pronouns were used and would not connect Rufus with Xantippe. As soon as a sentence with 'Xantippe' as subject was introduced into the conversation it would be impossible to know whether the sentence was about Rufus or not. Of course, the neighbours might actually state that Rufus and Xantippe were identical without providing a covering concept, and Nelson could

1. 'On the Alleged Incompleteness of Certain Identity Claims', p. 112.
accept that piece of information without further grounds in the same way as he accepted all the other information about Rufus and Xantippe provided by his neighbours. But it would provide no real guarantee that the two were identical for the speakers might merely be trying to confuse an eavesdropping neighbour—saying doesn't make it so. In short, I am quite unpersuaded that Nelson can set up his example convincingly.

On the other hand, even if he can, it is not the case that he has no covering concept at all. As he admits later he would know that Rufus and Xantippe were the same topic of conversation. But he can do better than this. The fact that both are summoned, scolded, praised and cursed implies that both are animate, causal agents, both are (in a loose or extended sense) moral agents, and so on.

A more powerful objection by Nelson is the following:

[F]rom the fact, if it be a fact, that every identity claim presupposes criteria of identity it does not follow that identity claims which do not themselves convey these criteria are semantically incomplete.²

The latter claim, Nelson says, 'is simply false'.³ Consider the set, S, of prime numbers. Then being a prime number is the criterion for being a member of S. But from this it doesn't follow that '3 is a member of S' is semantically incomplete,

1. Ibid.
2. Ibid., p. 110.
3. Ibid.
though the sentence itself gives no clue as to what the membership criterion for \( S \) is. What's at issue here is what is meant by 'semantically incomplete'. If we mean the relatively weak claim, made about '\( a = b \)' by (D.II), that we cannot judge whether '3 is a member of \( S \)' unless we know the membership criterion of \( S \) then, in that sense, '3 is a member of \( S \)' is semantically incomplete. If we mean a stronger claim that '3 is a member of \( S \)' is meaningless then clearly it is not semantically incomplete (unless we adopt the verification principle) but then neither is '\( a = b \)' (unless we adopt the verification principle).

But suppose we mean an intermediate claim that semantic incompleteness means having indeterminate truth-conditions (the claim made about '\( a = b \)' by (D.I)) then '3 is a member of \( S \)' is not semantically incomplete because we have the truth-condition: '3 is a member of \( S \)' is true if 3 is a member of \( S \) and false otherwise. But here the analogy between '3 is a member of \( S \)' and '\( a = b \)' breaks down. (D.I) was established on the basis of (R) but Nelson's example about \( S \) doesn't mirror the situation we have concerning '\( a = b \)' if (R) is true. A closer analogy would be when '\( S \)' was ambiguous between, say, the set of prime numbers and the set of numbers divisible by 3. In this case '3 is a member of \( S \)' has no determinate truth-conditions, and is semantically incomplete in the sense we are now considering.

On the other hand, we could make '3 is a member of \( S \)' semantically complete by specifying the sense of '\( S \)' intended each time '3 is a member of \( S \)' is uttered. Similarly, we can make '\( a = b \)' semantically complete by specifying in each use the respect in which identity is intended.
Nelson also distinguishes other (D)-type claims which he proceeds to dismiss. First of all, the relativist might merely be claiming that the statement \(a = b\) was not significant to a person who was unable to expand it into a statement of the form \(a \neq_F b\).\(^1\) This, he says, is a very weak thesis amounting to little more than saying that the sentence \(a = b\) 'is not as informative as it could be (as "a and b are the same\( F\) would be).'\(^2\) It seems to me that the actual thesis Nelson claims to be considering is a good deal stronger than this — it claims, for example, that not only is \(a = b\) not as informative as it might be but that it is not informative at all to a hearer who can't expand it into \(a \neq_F b\). Nelson's second objection works better: namely that the notion of significance employed in this version of (D) is relative to persons: what is significant for one person is not significant to another, depending upon what each already knows.\(^3\) In fact what we have here is the notion of information content in information theory. This version of (D) then boils down to the true but uninteresting claim that \(a = b\) will not be informative to some language-users but will be to others, depending upon the background knowledge of each. Finally, Nelson objects that there are some cases in which \(a = b\) is significant (or informative) even when we can't make the

1. Ibid., p. 111.
2. Ibid.
3. Ibid.
necessary expansion. As an example, he supposes that one friend has told him that he will give him (Nelson) something, a, and another friend also tells him that he will give him something, b. Nelson then claims that it is informative (or significant) for him to be subsequently told that \( a = b \). And clearly it is. But Nelson's counter example breaks down because he clearly can expand \( a = b \) into 'a is the same gift as b'. The objection to this version of (D) is not that it's false but that it is trivially true and therefore uninteresting.

The second (D)-thesis Nelson attacks is the claim that for each true identity statement of the form \( a = b \) there is an expansion with a substantival term as covering concept. Against this he urges that 'there surely may be things of no particular substantival kind (which are not correctly characterized by any substantival term), and hence that the thesis is simply false.' 2

This line of argument comes rather oddly from a philosopher who has previously objected to (R) on the grounds that it requires the existence of unsorted individuals. 3

However, his point depends upon a distinction (not very precisely drawn in either of his papers) between substantival terms and sortals. It seems likely that Nelson follows Wiggins in

1. Ibid.

2. Ibid., p. 112.

thinking that substantival terms are a species of privileged sortals, and this would permit him to deny the existence of unsorted individuals and affirm the existence of individuals which fall under no substantival term (I hesitate to call them 'unsubstantiated individuals'). However, in his very brief account of substantival terms he says: 'it is substantival terms which supply criteria of identity'.\(^1\) Although the context of this passage makes it clear that he is describing Geach's view there is nothing which suggests that he is demurring from Geach's terminological stipulation about the use of 'substantival term'.\(^2\) If we take this claim seriously, as I think we should, then Nelson has not got the distinction he needs between sortals and substantival terms, for (as I argued in Chapter Four) any sortal conveys criteria of identity and thus there can be no item which falls under a sortal but not under a substantival term. If, on the other hand, he wishes to maintain that substantival terms form a proper subset of sortals then this need not conflict with (D.II), for (D.II) is not refuted so long as there is some covering concept which conveys criteria of identity for any acceptable identity statement.\(^3\)


2. See Geach, Reference and Generality, pp. 39-40, and \(\S\)4.5.

3. The most obvious proper subset of sortals, namely ultimate sortals (obvious, because of the standard views about their relation to criteria of identity), cannot be the subset Nelson intends for every item which falls under a sortal falls also under an ultimate sortal.
§7.4 Perry's Criticisms of Wiggins' Theory. The most serious objection to (D.II) comes from Perry\(^1\), although it appears in a similar form in Nelson and Stevenson. Perry agrees with the (D)-relativist that sentences such as \('a = b'\) or \('a is the same as b'\) cannot be judged true or false until some general noun is specified, but he denies the (D)-relativists' conclusion that the general noun must be packaged with the identity sign (though he admits that it may appear there).\(^2\) He holds, in fact, that unsubscripted identity is a perfectly coherent notion and that \('\xi is the same as \eta'\) does not require expansion into \('\xi is the same \mathcal{F} as \eta'\). He implies that if he can show that this is the case he will have vindicated the absolute theory, whilst this is not quite correct he will certainly have undermined Wiggins' alternative to the absolute theory. If \('a = b'\) is semantically incomplete, and the incompleteness lies not in the '\=', then it must lie in \('a'\) and \('b'\). This is Perry's claim, which he makes rather prematurely thus:

\[
\text{We have accounted for the incompleteness of our examples by faulting the reference, [and]}
\]


2. Perry, Identity, p. 23.
the need to fault the relation, to say there is no such thing as [absolute] identity, disappears.¹

How close this position comes to (D)-relativism can be seen in the following remarks by Paul Benacerraf. Benacerraf agrees with the (D)-relativist that:

Identity statements make sense only in contexts where there exist possible individuating conditions. If an expression of the form \( x = y \) is to have sense, it can only be in contexts where it is clear that \( x \) and \( y \) are of some kind or category \( K \), and that it is the conditions which individuate things as the same \( K \) which are operative and determine its truth-value .... [Q]uestions of the identity of some particular 'entity' do not make sense. 'Entity' is too broad.²

But, given this, there are still two ways of interpreting identity statements:

One might conclude that identity is systematically ambiguous, or else one might agree with Frege, that identity is unambiguous, always meaning sameness of object, but that (contra-Frege now) the notion of an object varies from theory to theory, category to category.... This last is what I am urging, for it has the virtue of preserving identity as a general logical relation whose application in any given well-defined context (that is, one within which the notion of object is univocal) remains unproblematic.³

---

1. Perry, Identity, p. 17. It seems to me that this might well be the claim about sortals that Hampshire was making in the passage from 'Identification and Existence', quoted in §6.3 and which Wiggins mistakenly took for a (D)-thesis.


3. Ibid., p. 66.
It is clear that Perry and the (D)-relativist have much in common and differ mainly on how they propose to formalize their common insight.

Nelson and Stevenson use Perry's argument but give it rather less scope, using it as an ad hominem argument against Geach. Geach objects that 'a is the same as b' is semantically incomplete because it conveys no criterion of identity. But he also holds the view that every proper name conveys a nominal essence which is expressed by a general noun which conveys criteria of identity for the bearer of the name:

For every proper name there is a corresponding use of a common noun preceded by 'the same' to express what requirements as to identity the proper name conveys... 'Jemima' - 'the same cat' .... In all these cases we may say that the proper name conveys a nominal essence; thus 'cat' expresses the nominal essence of the thing we call 'Jemima', and Jemima's corpse will not be Jemima any more than it will be a cat.

Nelson presses home an apparent tension between these two positions:

[If Geach's view of proper names is correct, then every instance of such open sentences as 'x is identical with y' which replaces 'x' and 'y' with proper names, e.g., 'Tully is identical with Cicero', will carry with it the requisite criteria of identity. In the present example, since 'Tully' and 'Cicero' both have the sense of 'man', the information conveyed is that the claim is true if and only if Tully and Cicero are the same man.]


2. Reference and Generality, pp. 43-44.

Moreover, it seems that the objection can be extended to those instances of 'ζ is identical with η' which replace the placeholders with definite descriptions, for definite descriptions, in general\(^1\), include a general noun which could be said to express the nominal essence of the items referred to by the description. Of course, Nelson's objection will only work if we accept Geach's theory of proper names but we do not have to choose between (D) and Geach's theory of proper names. All Nelson has shown is that, at worst, (D) is made redundant by the theory of proper names, not that the two contradict each other.\(^2\)

Whilst both Nelson and Perry use this as an ad hominem argument against Geach, Perry also extends it as an argument against (D), without using the Geachian theory of proper names. Let us consider one of Perry's examples:

---

1. There are exceptions, of course, such as 'The Napoleon of Notting Hill'. But in this case 'Napoleon' may be treated as a disguised sortal such as 'man of Napoleonic qualities'. Cf. Zeno Vendler, *Linguistics in Philosophy*, pp. 41-42, 59; but compare Chomsky, *Aspects of the Theory of Syntax*, p. 100, who claims that the 'the' in such expressions as 'The Nile', 'The Hague' and 'The U.S.S.R.' should be treated as part of the name. Chomsky's explanation seems entirely plausible for 'The Hague', less so for 'The Nile' and 'The U.S.S.R.', and not at all plausible for 'The Napoleon of Notting Hill' and 'the late Lyndon Johnson'.

2. In fact, as I shall show in \(\S\)10.2, (R) provides Geach with a reason for holding his theory of proper names in addition to (D).
Suppose you point up river and then down river and as you point you utter the words 'Is that the same as that?' I reply, 'The same what?' If you say, 'The same river' my answer is 'yes, they are the same.' But if you say, 'The same water' or 'The same state', my answer may be 'No'.

So far this is the relativist way of dealing with the question. But Perry goes on to point out that the question becomes answerable not only if it is rephrased as 'Is this the same river (water, state) as that?' but also if it is rephrased as 'Is this river (water, state) the same as that river (water, state),'

[It]s it not plausible to say that it is 'this' and 'that' which fail to do their job and leave the question without a clear sense, because they do not make clear whether I am talking about this river and that river or this water and that water? If so, there is no reason to blame the incompleteness on the expression 'is the same as'.

Indeed, we must admit this plausibility and accept Perry's theory as a possible account of the problem. But Perry later goes further and claims: 'The general term does not tell us what relation is asserted to hold, but identifies for us the objects which are said to be the same.' So Perry is claiming not merely that his theory is a possible and plausible account, but that it is the correct one.

To support this conclusion Perry has only two arguments,

2. Ibid., p.17.
3. Ibid., p. 80.
neither of which is sufficient to establish his stronger claim. In the first place he claims the advantage of matching ordinary language:

We employ a general term next to the word 'same' in those cases in which the referring expressions do not include a general term - as with proper names and demonstratives. When we employ referring expressions that contain general terms themselves we do not feel the need for an additional general term after the 'same'.

This point about ordinary language is clearly false: we do not follow either one procedure or the other, but quite commonly use both together.

(7.9) This river is the same river as that river.

and

(7.10) This river is the same water as that river.

are both perfectly acceptable English sentences. Moreover, even if Perry's point were correct it does not prove that his theory is supported by ordinary usage. It merely shows that ordinary usage is indifferent between the two theories, using sometimes the one and sometimes the other to ensure the assessibility of identity claims. Perry's point may be that in (7.9) and (7.10) there is some redundancy which could be removed by the deletion of the covering concept. But this is not right either, for the result of these deletions on (7.9)

1. Ibid., pp. 80-81.
2. See Calvert, Relative Identity, p. 92.
and (7.10) is:

(7.11) This river is the same as that river.

Clearly a theory which reduced both (7.9) and (7.10) to (7.11) is false.

However, Perry intends something more than a mere deletion of covering concepts. He would presumably require (7.10) to be rewritten as:

(7.12) This water is the same as that water.

In general he would require that the substantival term in the singular terms of the identity statement should be that which covers the identity. But (7.12) doesn't even look as if it will preserve the sense of (7.10). In (7.10) the ostension was to rivers, in (7.12) it is to expanses of water. To validate his own theory against the relativists Perry would have to show that there was something defective in the reference provided by 'this river' and 'that river' in (7.10) so that what was really intended was a reference to expanses of water. But this does not seem a very plausible claim to make. There seems to be no reason why we must, in saying that 'a is the same F as b', use as covering concept the same general noun which was used (implicitly or explicitly) to make the reference to the items of which the identity is asserted. If this were the case then clearly the covering concept would be redundant (we could always discover what it was from the way the reference was made by the singular terms of the identity statement). In fact, there is no reason why the general term which is used to make the reference should also express the respect in which the
identity is intended. Of course, in ordinary usage this is often what happens and this gives Perry's theory its plausibility. And, equally obviously, the general term used to make the reference could be the one which supplies the criteria of identity, but whilst this is always possible there is no reason to think it is always the case.

Perry's second argument for his theory is related to Bradley's argument about the generalizability of sense-indefiniteness, except that Perry accepts the conclusion Bradley rejects and claims that as all statements in which predicates are attached to proper names have the sort of indefiniteness which (D) attributes to identity statements it can't be the identity relation that is at fault but the proper names:

If to fail to convey a criterion of identity were to fail to say which identity relation is asserted to obtain, it would seem that only assertions of identity could have this defect. But this is not the case. Suppose someone points at a river and says 'This has never been frozen before.' In a typical case, he would mean that the particular section of the river at which he was pointing had never before frozen. But circumstances are imaginable in which he might mean the water in the river had never before frozen.... The possibility of misunderstanding here seems to stem from the same cause as in our other cases. The addition of a general term would eliminate the misunderstanding just as it would do with 'This is the same as that.'

This line of argument considerably underestimates the role of identity criteria in natural language. If failure to convey a criterion of identity leads to a certain sort of inadequacy among identity statements there seems no reason to suppose

1. Ibid., p. 81.
that it mightn't lead to some related sort of inadequacy in referential statements for the two are closely linked. Moreover, it is significant that the precise sort of inadequacy Perry mentions (viz. failing to say which identity relation is asserted) is not generalized beyond identity statements where no identity relation is asserted at all. Failure to convey a criterion of identity is, as I have stressed already, a very important omission, not merely in identity statements, but in almost any statement which involves a singular term.

Whilst I see nothing in Perry's arguments which would force his theory upon us, nothing we have so far said shows that he is wrong, and the relativist right. I think, however, that if (R) is true then we are able to dismiss Perry's theory, for if different covering concepts make a difference to the truth or falsity of an identity statement then there seems to be no sense-preserving Perryan rewrite of such a statement. We may well make ostensions to rivers (which are expanses of water) and yet intend, by an identity statement, identity of expanses of water, not rivers. Just because we intend identity of expanses of water doesn't mean that our ostensions are 'really' to expanses of water and not to rivers.

On the other hand, if (R) is false then all the covering concepts for a given identity statement must provide equivalent identity criteria so that, no matter which of the possible covering concepts is chosen, the truth-value of the resulting statement will remain unchanged. We may still hold that a substantival term is required to provide criteria of identity according to which the identity statement may be judged but it is now a matter of indifference whether this term is supplied
by the singular terms of the statement or by the relation itself: the answer given by one will be the same as that given by the other. Thus it will be possible to assess the truth or falsity of an identity statement so long as some substantival term under which both items fall is known.

The effort to avoid a general noun in covering concept position often results in cumbersome English. Consider for example:

(7.13) The boy who supposedly couldn't tell a lie is the same as the man who became first president of the U.S.A.

The definite description which constitutes the first term of (7.13) refers under 'boy', whilst that which constitutes the last term refers under 'man'. We require some sortal under which both the boy and the man fall. Obviously 'person' is what is needed. Making this explicit, we get on the relativist view:

(7.14) The boy who supposedly couldn't tell a lie is the same person as the man who became first president of the U.S.A.

The most obvious Perryan rewrite of (7.14) would be:

(7.15) The person who supposedly couldn't tell a lie is the same as the person who became first president of the U.S.A.

But (7.15) hardly preserves the sense of (7.13) since it misses the temporal restrictions which are an essential part of (7.13).

1. Note, incidentally, that whilst (7.13) is only marginally acceptable English, both (7.14) and (7.15) are clearly acceptable.
A better attempt would be the awkward:

(7.16) The person who, as a boy, supposedly couldn't tell a lie is the same as the person who, as a man, became first president of the U.S.A.

The fact that a theory leads to cumbersome sentences, however, is no reason to suppose it false, and I am unable to see any defence for the (D)-relativist against Perry's theory. Admittedly, (D)-relativism is not refuted, for Perry has not shown it to be inconsistent. But neither has the (D)-relativist shown Perry's theory to be inconsistent and whilst the relativist can only hold some awkward English sentences against Perry, Perry can claim that the relativist has entirely unnecessarily complicated the well-understood and relatively simple classical concept of identity.

Perry's theory is related to the Fregean analysis, in that both are devices for extracting absolute identity statements out of relative ones. One might accept one or the other for this purpose or, as Perry in fact does, employ them both. It is clear that if either is introduced into a (D)-relative identity theory then relative identity relations become no more than absolute identity relations restricted to a certain category of items. As Geach complains 'any such theory differs

---

1. In fact, the only formal (D)-relative identity theory produced so far is provably consistent. Cf. Stevenson, 'A Formal Theory of Sortal Quantification', p. 6. Stevenson's theory, so far as I can tell, embodies precisely the main principles of Wiggins' theory.
only in a trivial way from a theory of absolute identity ¹ and is not the true doctrine.

There thus seems little point in pursuing a (D)-relative identity theory. It attempts to pursue a middle course, preserving the formal advantages of absolute identity whilst recognizing the force of the insights which lead to (R)-relative identity theory. On analysis, however, it turns out to be just a new way of stating the absolute theory. Not so (R)-relative identity. Perry rejects (R)-relative identity (as he must to preserve the adequacy of his own theory) and to his arguments, and those of others, we turn in the next chapter.

CHAPTER EIGHT

SOME GENERAL ARGUMENTS ON (R)-RELATIVE

IDENTITY

§8.1 Formal Requirements of Identity. Any relation which is
to count as an identity relation must satisfy the formal
syntactical requirements of reflexivity, symmetry and tran-
sitivity. A relation which failed any of these could not be
an identity relation. However, we must formulate these
principles in a way appropriate for relative identity theory,
since clearly the absolute identity formulations of §1.1 will
not do. The (R)-relativist is committed to two versions of
reflexivity:

\[(8.1) \quad (\forall x) (\exists \delta)(x =_\delta x)\]

and

\[(RR) \quad (\forall x) (\forall \delta)(\delta(x) \supset x =_\delta x)\]

(The principle that \((\forall x)(\forall \delta)(x =_\delta x)\) is false, for no item falls
under every substantival term.) We can derive (8.1) from (RR)
and the unexceptionable principle:

\[(8.2) \quad (\forall x) (\exists \delta) \delta(x)\]

Relative symmetry is given by:

\[(RS) \quad (\forall x) (\forall y) (x =_F y \supset y =_F x)\]
and relative transitivity by:

\[(RT) \quad (\forall x)(\forall y)(\forall z)(x =_F y \land y =_F z \rightarrow x =_F z)\]

The same points about the second-order quantification over substantival terms which applied for (RR) apply here: in each case an existentially quantified version can be derived from (8.2) and an appropriately conditionalized universally quantified version.

The question with which this section is concerned is: Are these principles compatible with (R)? Suppose we admit the following as a well-formed, quantified version of (R):

\[(8.3) \quad (\forall x)(\forall y)(\exists \delta)(\exists g)(x =_\delta y \land x \neq^g y)\]

With appropriate instantiations this becomes:

\[(8.3a) \quad a =_F a \land a \neq^G a.\]

Since, by definition of 'a \neq^G b' we have 'G(a)', (RR) fails on account of the second conjunct of (8.3a). Given that reflexivity fails, so also will one or both of transitivity and symmetry. But all this shows is that the (R)-relativist may not permit himself (8.3), that is a version of (R) with universal (or multiply-general) quantification of individual variables. It does not show that he cannot assert the more reasonable claim:

\[(8.4) \quad (\exists x)(\exists y)(\exists \delta)(\exists g)(x =_\delta y \land x \neq^g y).\]

Perry has a non-reflexivity argument which avoids this
problem, though it falls foul of another. Perry assumes\(^1\) (with Wiggins) the principle of the indiscernibility of F-identicals which can be expressed thus:

\[
(8.5) \quad (\forall x)(\forall y)[(\exists \delta)(x =_\delta y) \Rightarrow (\forall \phi)(\phi(x) \equiv \phi(y))] \]

Given:

\[
(8.6) \quad a =_F a \& a \not= _G b
\]

as our case of (R), we can reconstruct his argument as follows:

\[
\begin{align*}
[1] & \quad (\exists \delta)(a =_\delta b) \Rightarrow (\forall \phi)(\phi(a) \equiv \phi(b)) \quad ((8.5), U.I. a/x, b/y) \\
[2] & \quad (\exists \delta)(a =_\delta b) \quad ((8.6), \text{Simp. E.G. } \delta/F) \\
[3] & \quad (\forall \phi)(\phi(a) \equiv \phi(b)) \quad ([1][2], \text{ M.P.}) \\
[4] & \quad a \not= _G b \Rightarrow a \not= _G a \quad ([3], U.I. a \not= _G \xi/\phi(\xi), \text{Simp.}) \\
[5] & \quad a \not= _G a \quad ((8.6) \text{Simp.}[4], \text{M.P.})
\end{align*}
\]

But this is not terribly damaging either, for we already know (from the proof in \(\S 1.5\)) that (8.5) is incompatible with (R). In order to block Perry's proof the (R)-relativist has merely to reject (8.5), and this he has to do anyway on pain of contradiction.

I know of only two other arguments which seek to show that (R)-relative identity relations fail the formal identity requirements and both can be as easily dismissed. The first is due to Thomason\(^1\). Suppose \(\mathcal{V}\) is a bivalent valuation and

---

1. Though he does not state it. See Identity, p. 27; 'The Same F', p. 186.

2. 'A Semantic Theory of Sortal Incorrectness', p. 225. (I've paraphrased his argument slightly.)
that \( \forall (a =_F b) = T \). Then, if \( \forall (b =_G b) = T \) and \( \forall (a =_F b \supset (b =_G b \supset a =_G b)) = T \), it follows that \( \forall (a =_G b) = T \), and hence that (R) can be ruled out. The alternative is to reject \( \forall (b =_G b) = T \) or \( \forall (a =_F b \supset (b =_G b \supset a =_G b)) = T \), but \( b =_G b \) and \( a =_F b \supset (b =_G b \supset a =_G b) \) 'are both valid in the two-valued logic of identity'.\(^1\) However this may be in the classical theory of identity, it is not the case in the relative theory; \( b =_G b \) is valid, even in a (D)-relative theory, only so long as \( G(b) \) is\(^2\), so all we have is \( \forall (G(b) \supset b =_G b) = T \). However, we could reconstruct Thomason's argument to allow for this. What the (R)-relativist is under no obligation to accept is the validity of

\[
(8.7) \quad a =_F b \supset (b =_G b \supset a =_G b)
\]

which results from the simple denial of his main thesis. (Of course, he has to accept the validity of \( a =_G b \supset (b =_G b \supset a =_G b) \), but the difference between the two is precisely the point in question.) In fact (8.7) follows from the relativized version of Wang's Law:

\[
(8.8) \quad \phi(a) \equiv (\exists x) (\phi(x) \& a =_F x)
\]

which gives on instantiation

\[
(8.9) \quad (\phi(b) \& a =_F b) \equiv \phi(a)
\]

1. Ibid.
2. Which, of course, it isn't if 'G' is substantival.
and thence, substituting \( \xi = G b' \) for \( \varphi(\xi) \), (8.7). But the (R)-relativist would no more want to accept (8.8) than he would (8.5), for (8.5) is derivable from (8.8).¹

The second argument is due to Quine², and runs parallel to Thomason's so we may run through it briefly for the sake of completeness. Suppose that \( 'R_1(\xi,\eta)' \) and \( 'R_2(\xi,\eta)' \) are two relations such that:

\[
\begin{align*}
(8.10) & \quad (\forall x)R_1(x,x) \\
(8.11) & \quad (\forall x)R_2(x,x) \\
(8.12) & \quad (\forall x)(\forall y)(R_1(x,y) \land \varphi(x) \supset \varphi(y)) \\
(8.13) & \quad (\forall x)(\forall y)(R_2(x,y) \land \varphi(x) \supset \varphi(y))
\end{align*}
\]

all obtain. Then it follows that \( 'R_1(\xi,\eta)' \) and \( 'R_2(\xi,\eta)' \) are coextensive, since by (8.12) we have \( (\forall x)(\forall y)(R_1(x,y) \land R_2(x,x) \supset R_2(x,y)) \). From here Quine's argument duplicates Thomason's. He derives \( (\forall x)(\forall y)(R_1(x,y) \supset R_2(x,y)) \), by means of (8.11), and its converse by a parallel argument using (8.13) instead of (8.12), thus establishing coextensivity. The argument fails, of course, because with (R)-relative identity relations for \( 'R_1(\xi,\eta)' \) and \( 'R_2(\xi,\eta)' \) (8.12) and (8.13) do not hold.

¹. This argument might prove awkward for Geach since he holds that any identity relation \( 'R(\xi,\eta)' \) must satisfy \( \varphi(a) \equiv (\exists x)(\varphi(x) \land R(a,x)) \). But see §8.3 for discussion.

². 'Reply to Professor Marcus', in The Ways of Paradox, p. 178.
The common feature in these four attempts to prove the formal inadequacy of (R)-relative identity theories is that they each insist on attributing to the (R)-relativist principles of absolute identity which he is happy to deny. Nothing has so far been done to force us to reject (R).

§8.2 Substitutivity Principles for Relative Identity. Whilst (R) does not run into trouble with reflexivity, symmetry and transitivity (provided these are correctly formulated), we have so far provided no substitutivity principle for (R)-relative identity statements. Such inferences as the following clearly need justification by an adequate theory of identity:

(I) \[a \text{ is the same colour as } b\]
\[a \text{ is red}\]
\[\therefore b \text{ is red}\]

(II) \[a \text{ is the same car as } b\]
\[a \text{ belongs to John at } t\]
\[\therefore b \text{ belongs to John at } t.\]

How such inferences are to be justified is problematic. Plainly (8.5) is not the principle, and neither is (8.8).

---

1. My usage of 'substitutivity principle' is somewhat sloppy. I'm aware, e.g., of the distinction in absolute identity theory between (LL) and the principle of the substitutivity of identicals but in this section I propose to ignore it for the sake of a concise terminology. (On the distinction see, e.g., Richard Cartwright, 'Identity and Substitutivity', in M.K.Munitz (ed.), Identity and Individuation, pp. 119-133.)
A number of attempts have been made to formulate correct substitutivity principles for (R)-relative identity. Wiggins proposes a version of (Ind.Id.) which, he claims, 'is unquestionable on any view':

\[(8.14)\quad a_R b \Rightarrow (\forall \phi)[(\forall x)(x_R a \Rightarrow \phi(x)) \equiv (\forall y)(y_R b \Rightarrow \phi(y))]\]

Wiggins' objection to (8.14) is that it does not, on its own, license the inferences we want licensed. Suppose we have:

\[(8.15)\quad a_R b\]

and

\[(8.16)\quad \phi(a)\]

('Cicero is the same man as Tully' and 'Cicero denounced Catiline', respectively, in Wiggins' example). According to Wiggins we can get as far as

\[(8.17)\quad (\forall x)(x_R a \Rightarrow \phi(x)) \equiv (\forall y)(y_R b \Rightarrow \phi(y))\]

from (8.14) and (8.15) by modus ponens and universal generalization, but we cannot get to

\[(8.18)\quad \phi(b)\]

without the additional assumption:

\[(8.19)\quad (\forall x)(x_R a \Rightarrow \phi(x))\]

---

Moreover, if we admit (8.19) we rule out (R) - substitute 'ξ =_G b' for 'Φ(ξ)' - and thus we lose the very principle we sought to preserve.

The same defect vitiates a similar formula proposed by Odegard in which the quantifiers are placed in such a way as to prevent the instantiations which would rule out (R):¹

\[(8.20) \quad a =_F b \supset (\forall \phi) [(\phi(a) \supset (\exists x)(\phi(x) \land x =_F b)) \land \\
(\phi(b) \supset (\exists x)(\phi(x) \land x =_F a))]\]

So far as I can see there is nothing in (8.20) which renders it incompatible with (R). Indeed, the quantifiers are, rather, over-protected for I do not know how to use (8.20) in validating the inferences we wish to validate. Moreover, (8.20), as L.H. Davis has pointed out², does not distinguish relative identity relations from any other symmetrical relations for if 'R(ξ,η)' is symmetrical then

\[(8.21) \quad R(a,b) \supset (\forall \phi) [(\phi(a) \supset (\exists x)(\phi(x) \land R(x,b))) \land \\
(\phi(b) \supset (\exists x)(\phi(x) \land R(x,a)))]\]

But Odegard comments:

I don't find [(8.20)'s] failure to distinguish identity from other symmetrical relations disturbing (≠ embarrassing). I don't see why there must be a general law performing such a service. Something must serve to distinguish identity

from other symmetrical relations, but there needn't be one feature which does this for every case. Different specific features can do it for different cases.¹

This seems entirely reasonable and certainly we wouldn't want to reject (8.20) if (8.21) holds for symmetrical 'R(ξ,η)', but it does not help us with the problem in hand.

As an alternative to (8.14) Wiggins suggests the following as a substitutivity rule:²

(8.22)  a =_F b ↔ (φ(a) as an F _ φ(b) as an F)

I am not at all sure what to make of this bizarre formula. How, for instance, are predications for which the 'as an F' qualification is inappropriate to be taken? If a and b are the same number does it follow that a is prime as a number iff b is prime as a number? This is surely absurd and results, like many philosophical absurdities, from pursuing an analogy too hard: in this case the analogy between (R)-relative identity and what Wiggins (rather idiosyncratically) terms 'attributive adjectives'³ such as 'big', 'small', 'tall' and 'short' where

¹. Ibid., p. 3.
². Identity and Spatio-Temporal Continuity, p. 23.
³. Ibid. Geach uses the term somewhat similarly (cf. 'Good and Evil', p. 33) but does at least qualify them as 'logically attributive adjectives'. The linguists' use of the expression is somewhat different from Wiggins'.
it does make sense to say that someone is tall as a man but short as a basketball player. But even assuming we can make sense of this proposal, it is of no use to us for it does not entitle us to infer \( \phi(b) \) from '\( a =_F b \)' and '\( \phi(a) \)', but only to infer '\( \phi(b) \) as an \( F' \) from '\( a =_F b \)' and '\( \phi(a) \) as an \( F' \)'.

Wiggins can't just delete the 'as an \( F' \) at the end of an inference as a sort of final step because, presumably, his idea is that when we have '\( a =_F b \)' and '\( a \neq_G b \)' and '\( \phi(a) \) as an \( F' \)' we can infer '\( \phi(b) \) as an \( F' \)' even though '\( \neg(\phi(b) \text{ as a } G) \)'.

If 'as an \( F' \)' were merely deletable he would have no more than an open formula corresponding to (8.5).

Wiggins, of course, is not too anxious to devise adequate substitutivity principles for (R)-relative identity, but he does suggest a version which, I think, gets us close to part of what we want:

\[
(8.23) \quad (\forall \delta)[(\delta(a) \lor \delta(b)) \Rightarrow a =_b b] \Rightarrow \\
[\neg(\exists \phi) \Rightarrow (\forall \delta)(\phi(a) \equiv \phi(b))] 
\]

Firstly, I'm not sure what '\( a =_G b \)' is doing in (8.23), for if \( a \) is identical to \( b \) with respect to every substantival term under which either falls, there seems little reason to add the requirement that there is some substantival term under which they are identical since every item falls under some such term. Since whenever one or other of '\( F(a) \)' or '\( F(b) \)' is false '\( a =_F b \)' will be false, it seems natural to replace Wiggins'
disjunction by a conjunction. Given these two amendments we have:

\[(8.24) \ (\forall \delta)[(\delta(a) \& \delta(b)) \supset a =_{\delta} b] \supset (\forall \phi)(\phi(a) \equiv \phi(b))\]

With the account of absolute identity given in \S 16.2, we have:

\[(8.25) \ a = b \supset (\forall \phi)(\phi(a) \equiv \phi(b))\]

which is back where we started in \S 11.1.

Wiggins' objection to (8.23) and also, presumably, to (8.26) is "how on earth does one ever establish that \[(\forall \delta)[(\delta(a) \lor \delta(b)) \supset a =_{\delta} b]?\] If we allowed any general noun to be a covering concept I can well imagine that there would be a problem here, for how would we know that a and b were identical with respect to every general noun under which either fell? The class of general nouns contains some pretty abstruse members (e.g., 'red object thought of by Napoleon'). But as covering concepts are restricted to substantival terms there seems to be no problem, in some cases, in knowing that \[(\forall \delta)[(\delta(a) \lor \delta(b)) \supset a =_{\delta} b],\] at least given some initial relative identity statement, \(a =_{G} b\). For example, if a is the same number as b then it seems highly likely that for every substantival term under which a and b fall a and b are identical with respect to it. Moreover the question of how we know whether \[(\forall \delta)[(\delta(a) \lor \delta(b)) \supset a =_{\delta} b]\] only crops up when substantival terms are covering concepts because apart from substantival terms questions as to criteria cannot be answered anyway.

---

1. Ibid.
The fact that (8.25) is a restatement of (Ind.id.) does not mean that (R) is ruled out, for (R) cuts out on just those occasions when 'a = b' is glossed as it is in (8.25). If a and b are identical with respect to every substantival term under which they fall, they are not distinct with respect to any such substantival term. Thus no case of (R) of the 'a =_F b & a \not\in_G b' variety can occur. Thus there is nothing in (R)-relative identity to cause us to reject (8.25). But (8.25)'s use is limited. We can use it to validate (I) but only when a and b are not only the same colour but the same with respect to every substantival under which they fall. What of the case in which a and b are the same colour but, for example, distinct cars? (I) is still a valid inference, but we have no principle which validates it. On the other hand, the principle we propose mustn't be so strong as to licence:

(III) \begin{align*}
    \text{a is the same colour as } b \\
    a \text{ is a car} \\
\end{align*}
\begin{align*}
    \therefore \ b \text{ is a car}
\end{align*}

The formal solution is simple, what it amounts to is more difficult. For each substantival term 'F' there is a class \( \Delta_F \) of predicates such that \( F \)-identity implies indiscernibility with respect to the predicates in \( \Delta_F \), or \( \Delta_F \)-indiscernibility. Formally, the principle is:

(Sub) \( a =_F b \supset (\forall \phi \in \Delta_F) (\phi(a) \ \\not\phi(b)) \).
We can now attempt to feed into (Sub) whatever content we need to validate those inferences we wish to validate. We can obviously put in as much or as little as we wish and we already have (8.24) as a limit case.

However, the problem of what predicates to put into $\Lambda_F$ is not easy. This is not a special difficulty for relative identity, however, since the absolutist ought to be able to validate inferences such as (I) even though he would deny that identity was involved. It appears that the relativist is in special trouble merely because the relativist is pushing his theory beyond the limits of the classical theory. If the classical theory were extended to cover the same ground it would hit exactly the same problem. I shall argue that for each substantival 'F' the corresponding $\Lambda_F$ will include at least three subsets. The first subset consists of those predicates the applicability of which to a is entailed by a's being an F. In other words, if '$\phi(\xi)$' is a predicate such that $F(a) \to \phi(a)$ then '$\phi(\xi)$' $\in \Lambda_F$. Including these predicates would validate:

(IV)  
a is the same colour as b  
a is not transparent  

\[ \therefore \text{b is not transparent} \]

(for being a colour entails being not transparent and thus 'b is not transparent' is a member of $\Lambda_{\text{colour}}$) and:

(V)  
a is the same car as b  
a is a motor vehicle  

\[ \therefore \text{b is a motor vehicle} \]
(since being a car entails being a motor vehicle). This first subset of \( \Delta_F \) is clearly unexceptionable, for if 'a =F b' then 'F(a)' and 'F(b)' and if being F entails being \( \phi \) then both '\( \phi \)(a)' and '\( \phi \)(b)'.

But we so far have not validated (I). It is tempting to do so by simply reversing the entailment, so that if '\( \phi(\xi) \)' is such that \( \phi(a) \rightarrow F(a) \) then '\( \phi(\xi) \)' \( \epsilon \Delta_F \). But this attempt fails because if we have '\( \xi \) is the same token word as a' for '\( \phi(\xi) \)' and '\( \xi \) is a type word' for 'F(\( \xi \))' we can validate:

\[
(VI) \quad a \text{ is the same type word as } b \\
\quad a \text{ is the same token word as } a \\
\quad \therefore \quad b \text{ is the same token word as } a
\]

for '\( \xi \) is the same token word as a + \( \xi \) is a type word and thus '\( \xi \) is the same token word as a' is a member of \( \Delta_{\text{type word}} \). (VI), however, is clearly invalid. The answer seems to be to restrict predicates in this second subset of those which are determinates of which 'F' is the determinable. Thus, for example, any sortal predicate 'S(\( \xi \))' such that S \( \subseteq T \) is a member of \( \Delta_T \), and similarly, for example, with mass term predicates. This entitles us to draw inferences such as the following:

\[
(VII) \quad a \text{ is the same car as } b \\
\quad a \text{ is a Ford car} \\
\quad \therefore \quad b \text{ is a Ford car.} 
\]
(VIII) a is the same helping of food as b
a is porridge

\[ \therefore \text{b is porridge} \]

as well as (I).

All this has made (Sub) reasonably strong, but it is not yet as strong as we would like. We have yet to validate (II) and

(IX) a is the same car as b
a is 12 feet long

\[ \therefore \text{b is 12 feet long.} \]

(II) and (IX), in spite of their obvious differences, seem to me to have basic similarities from our point of view. Being a car entails both being owned by somebody or other and having some definite length or other, thus the quantified relational predicates \'(\exists x)(\xi \text{ is possessed by } x)' and \'(\exists x)(\xi \text{ is } x \text{ units of length long})' are both members of the first subset of \(\Lambda_{\text{car}}\). What we need to add is that particular instantiations of such predicates are also members of \(\Lambda_{\text{car}}\) and similarly for other substantival terms (e.g., \('\xi > 5'\) is a member of \(\Lambda_{\text{number}}\)).

It seems then that for a substantival term \(F\) the set of predicates \(\Lambda_F\) consists of at least the following three subsets: (i) the set of predicates \(\mathcal{O}(\xi)\) such that \(F(a) \in \mathcal{O}(\xi)\); (ii) the set of predicates \(\mathcal{O}(\xi)\) such that
'\phi(\zeta)' results from the predicate '\psi(\zeta)' by replacing every occurrence of one or more bound variables in '\psi(\zeta)' by a constant and such that \( F(a) = \psi(a) \); (iii) the set of predicates '\phi(\zeta)' such that '\phi' is the determinate of which 'F' is the determinable. I cannot profess that these subsets exhaust the set \( \Delta_F \) and are thus comprehensively adequate for all our inferences from \( F \)-identity statements. I do, however, think that each subset is necessary for some of these inferences and that together they give some idea of what is necessary for a specification of \( \Delta_F \).

Moreover, suppose that we can fully characterize \( \Delta_F \) then it would be desirable if we could characterize it in such a way as to give the reverse implication so that we have:

\[(RLL) \quad a =_F b \equiv (\forall \phi \in \Delta_F)(\phi(a) \equiv \phi(b))\]

Of course, we would need to feed into \( \Delta_F \) far more than the three groups of predicates listed above if (RLL) is to hold. However, if we establish a suitable set \( \Delta_F \) for (RLL) then, as Richard Routley has pointed out to me, there is a simple demonstration of (R). Suppose \( a \) and \( b \) share all their predicates except '\( \phi(\zeta) \)' which is such that \( \phi(a) \) and \( \neg \phi(b) \).

Let \( \Delta_F \) be the set of all the predicates which they share, and let \( \Delta_G \) be the set of predicates formed from \( \Delta_F \) by the addition of '\( \phi(\zeta) \)' then (RLL) immediately gives us \( a =_F b \land \neg(a =_G b) \). Given an adequate specification of \( \Delta_F \) it seems highly desirable to make (RLL) rather than (Sub) the basis of an (R)-relative identity theory.
§8.3 Geach's Argument from Ontology. There is, so far as I know, only one general argument which has been presented in detail in favour of the relativity of identity. It takes up half of Geach's paper 'Identity' and appears much revised in 'Ontological Relativity and Relative Identity'. Geach talks throughout his papers about I-predicates, rather than about the identity relation. An I-predicate he defines as a two-place predicate 'I(ξ,η)' that satisfies Wang's schema for the constructible expressions of a theory T:

\[(8.26) \quad ϕ(a) \equiv (\exists x)(ϕ(x) \& I(x,a))\]

He takes it as unexceptionable that a two-place predicate should be an I-predicate only in relation to a given theory or language T. This is not the thesis of the relativity of identity but only notes the fact that 'what an expression signifies is relative to the language we are using'. Nor does this conflict with his account of what an I-predicate is: different I-predicates can be defined for different theories, for the allowable substitutions for 'ϕ(ξ)' in

---

1. I ignore, except in quotation, his distinction between predicates and predicables. Cf. Reference and Generality, pp. 24-25.

2. Geach, 'Identity', pp. 4-5. This position on identity is accepted by absolutists. Cf. for example, J.N.Crossley et al, What is Mathematical Logic? (Oxford: Oxford University Press, 1972), p. 21; Quine, Set Theory and its Logic, p. 15; Nelson, 'Relative Identity', pp. 244-245. It seems to conflict with some of the other things Geach says, as we'll see later.
(8.26) will be different. (For the predicates which form the descriptive resources of the theory and which, therefore, can be substituted for 'φ(ξ)' Geach borrows Quine's term 'ideology'.) According to Geach there is nothing in this which shows that an I-predicate in a theory T must express absolute identity for it may express only indiscernibility relative to the ideology of T.

Now what this amounts to as far as the theory of relative identity is concerned is not at all clear. From (8.26) we can derive:

\[(8.27) \quad (φ(b) \land I(a,b)) \Rightarrow φ(b)\]

Suppose we have two I-predicates 'I(ξ,η)' and 'I*(ξ,η)', both of which satisfy (8.26) - and therefore (8.27) - and reflexivity. Then we can, by means of Quine's argument of §8.1, prove that they are coextensive. But if they are coextensive they cannot be used to generate a case of (R). Thus in the sense of 'absolute identity' which contrasts with Geach's use of 'relative identity' we must interpret I-predicates as expressing absolute identity. In return, by limiting substitutions to the ideology of a given theory, we have achieved a form of relativism which even Quine could accept. The whole notion of an I-predicate as defined by Geach seems to have contributed nothing to the defence of (R). On the one hand, within a theory T all I-predicates will be coextensive, whilst on the other the claim that two I-predicates in different theories are

1. 'Identity', p. 5.
not necessarily coextensive is uncontroversial. But let us leave this on one side for a while and consider the remainder of Geach's argument.

According to Geach we cannot take satisfaction of (8.26) as a necessary and sufficient condition for an I-predicate's expressing absolute identity. An I-predicate which satisfies (8.26) relative to the ideological resources of some theory may either express theory-relative relative identity, or theory-relative absolute identity (if we may allow ourselves these ill-begotten expressions on the condition that they won't appear outside this section). On the other hand, it does appear that Geach holds that if we don't relativize I-predicates to the ideological resources of a given theory we have to interpret them as absolute identity relations (theory-independent absolute identity). Geach doesn't state such a principle but his next move is incomprehensible, as far as the justification of relative identity is concerned, without it, for he proceeds to sketch an argument to show that we have to relativize I-predicates to a given theory.¹ If we do not so relativize the I-predicates then we can say that whatever is true of something identical to a is true of a, and this unqualified talk of 'whatever is

¹. Ibid. Clearly, given the concerns of the present argument, there would be no point in showing that we had to relativize I-predicates to a theory if the question was totally irrelevant to the interpretation of I-predicates as expressing either relative or absolute identity.
true of' leads to the semantic paradoxes. On pain of paradox we have to relativize the I-predicates to the ideology of a given theory. If all this is correct then Geach has shown that the relative identity interpretation of the I-predicates is permissible, he has not shown that it is obligatory.

This last stage of the argument, however, is only valid if relativizing substitutions to the ideology of a theory is the only way of avoiding the semantic paradoxes. As an alternative we may deny that all sentences are either true or false and claim, in particular, that those which give rise to the paradoxes are neither. We then get no paradox from the claim that whatever is true of something identical with a is true of a. On the other hand, there might be independent grounds for relativizing substitutions to the ideology of a given theory, so that this course is unavoidable whether or not the semantic paradoxes argument is valid.

1. 'Identity', p. 5.


3. This suggestion comes from Carl Calvert, Relative Identity, pp. 18-19. For a more general account of such suggestions see R.L. Martin (ed.), The Paradox of the Liar, (New Haven: Yale University Press, 1970). In my entire discussion of this argument I am indebted to Calvert's long and careful discussion.
Be this as it may we have still to decide whether Geach is correct in claiming that an I-predicate need not express absolute identity when it is relativized to a given theory. Geach argues for this claim in the following way: Suppose we have two theories T and T+ such that T's ideology is a proper subset of the ideology of T+ and that the predicate 'I(ξ,η)' is common to both. Suppose further that 'I(ξ,η)' is an I-predicate in T but not in T+. It follows, since satisfaction of (8.26) is a necessary condition for 'I(ξ,η)' expressing absolute identity, that 'I(ξ,η)' does not express absolute identity in T+. But 'I(ξ,η)' in T is synonymous with 'I(ξ,η)' in T+ and since it does not express absolute identity in T+ it does not in T either. Thus satisfaction of (8.26), though a necessary condition for 'I(ξ,η)' expressing absolute identity, is not a sufficient condition. Thus there is no need to assume that an I-predicate expresses absolute identity.1 Geach will also, presumably, argue that there is nothing to stop us adding predicates to our present natural language, L, in such a way that things previously identical (because indiscernible) in L become discernible (and therefore non-identical) in L+. If this occurs then the I-predicates in L will be found not to express absolute identity, and as we do not wish to impede the development of the ideology of our language we had best not assume that any predicate in L expresses absolute identity. Now if all this is correct Geach has gone further than his original argument for the permissibility of a relative

identity interpretation of I-predicates, and has given us a positive reason for not accepting the absolute identity interpretation. Whether it is correct I shall consider later.

According to Geach, Quine's view of this matter would be that if we find an I-predicate in T we must construe the range of the quantifiers of T as the class of objects for which the I-predicate expresses absolute identity and construe the other predicates of T accordingly. In the wider system T+ the range of the quantifiers may be different and, although each complete sentence of T is unchanged in T+ and has the same truth-conditions, the parts of each sentence will need reconstruing. Suppose, to use Geach's example, we let the quantifiers of T range over the words and letters in a book, and furthermore suppose that the ideology of T is so impoverished that it cannot discriminate between different tokens of the same type. Let 'I(\xi,\eta)' be an I-predicate in T. Now, on the considerations of the preceding argument we have two possible interpretations:

(i) We can treat the quantifiers of T as ranging over token words and token letters and read 'I(x,y)' as 'x is a token

1. Ibid., pp. 6-7. For evidence that this is indeed Quine's view of the matter see Set Theory and its Logic, p. 15.

2. 'Must' is in dispute here. Quine's Set Theory and its Logic suggests 'may', but if we use 'may' there is no conflict with Geach's permissive conclusion. See Perry, Identity, p. 38 and Calvert, Relative Identity, p. 25 for a discussion of the issues.
equiform with y'; or (ii) we can treat the quantifiers as ranging over type words and type letters and read 'I(x,y)' as 'x is identical with y' in the sense of absolute identity. Quine, says Geach, would have us choose the second alternative.

The general difference between the two interpretations is that in the first the quantifiers range over individuals and in the second over sets of individuals. With this in mind we can get a better idea of the concept of absolute identity which Geach is here using to contrast with relative identity and thus resolve some of the puzzlement with which this section opened. A partition $\Pi$ of a set $A$ is a set of mutually exclusive, non-empty subsets of $A$ whose union equals $A$. Partition $\Pi_1$ is finer than partition $\Pi_2$ iff they are not the same and every set of $\Pi_1$ is included in some set of $\Pi_2$. The finest partition of a set is a partition finer than any other partition of the set. Every I-predicate determines a partition of the domain over which range the quantifiers of the theory with respect to which the I-predicate was defined. An I-predicate which expresses absolute identity determines the finest partition of the domain. According to Quine, therefore, we should always interpret the quantifiers of a theory in such a way that the I-predicate of the theory determines the finest partition of the domain of the quantifiers. According to

Geach we need not do this. Now, as Calvert points out, we can always reinterpret a theory whose I-predicate does not determine the finest partition in such a way that it does. Let $\Pi_D$ be the partition of the domain $D$ determined by the I-predicate $'I(\xi,\eta)'$ of the theory $T$. Now either $\Pi_D$ is the finest partition of $D$, or it is not. If it is then the equivalence class of $'I(\xi,\eta)'$ is a unit class. If it is not then we can reinterpret the quantifiers of $T$ in such a way as to range over $\Pi_D$, the set of equivalence classes of $'I(\xi,\eta)'$, instead of over $D$. Thus an absolute identity interpretation of $'I(\xi,\eta)'$ is always possible. Alternatively, if $'I(\xi,\eta)'$ doesn't determine the finest partition of $D$ we can delete from each class of $\Pi_D$ all but one member; or again, we can increase the ideology of $T$ until $'I(\xi,\eta)'$ does produce the finest partition. In dealing with cases of $(R)$ all three methods are sometimes used by absolutists.

Geach then goes on, in the third part of his argument, to give a reason for rejecting Quine's interpretation. Suppose we have a range of theories, $T_1, T_2, T_3$, etc. each of which is a sub-theory of a richer theory $T$, from which they might be formed by, say, the omission of certain predicates. We can then suppose a range of two-place predicates, $'I_1(\xi,\eta)'$, $'I_2(\xi,\eta)'$, $'I_3(\xi,\eta)'$, etc. each of which was an I-predicate in one of the sub-theories: $'I_1(\xi,\eta)'$

1. Relative Identity, pp. 28-29.
in \( T_1 \), etc. Now, according to Quine, \( 'I_1(\xi,\eta)'' \) would have to express (or should be thought of as expressing) absolute identity in \( T_1 \), \( 'I_2(\xi,\eta)'' \) in \( T_2 \), etc. As a consequence of Quine's view the quantifiers in \( T_1 \) would have to be construed as having a different range from those in \( T_2 \), and similarly for all the sub-theories. But, claims Geach, this offends against 'a highly intuitive methodological program' \(^1\) adumbrated by Quine himself, namely that we should allow our ideology to expand fairly easily but that our ontology, though always revisable, should be kept relatively definite and not allowed to expand without good reason. For if we construe \( 'I_1(\xi,\eta)'' \), \( 'I_2(\xi,\eta)'' \), etc. as absolute identity predicates in \( T_1 \), \( T_2 \), etc., respectively, then our ontology is going to change as we move from one theory to the next. \(^2\) Geach concludes:

We wanted to keep our ontology comparatively fixed while allowing changes in our ontology; but now some quite trivial changes in our ideology - the mere omission of some predicates from a theory - will result in quite large additions to our ontology, to the realm our quantifiers are supposed to range over. \(^3\)

1. 'Identity', p. 8.

2. Quite how it will change is left unclear. Geach implies that ontology will expand as ideology does (ibid., p. 8) but gives an example in which ontology expands as ideology contracts (ibid., p. 10).

3. Ibid., p. 9.
Now Quine, because he insists that I-predicates should always be interpreted as expressing absolute identity, is presumably prepared to accept some changes in ontology, so what Geach is called upon to show is that the changes in ontology are definitely undesirable ones from Quine's point of view. The example which Geach uses to support this claim is one of the most misunderstood parts of his paper. Suppose we have a theory T the ideology of which cannot discriminate between men with the same surname. Let 'I(ξ,η)' (read: 'ξ is the same surman as η') be the only I-predicate in T, where 'ξ is the same surman as η' means 'ξ and η are both men and have the same single surname'. According to Geach, interpreting 'I(ξ,η)' as expressing absolute identity calls into being, as values of the quantifiers of T, a universe of androids (viz. surmen) who differ from men only in that different surmen cannot have the same surname. Such ontological expansion is undesirable for 'Leeds does not contain androids as well as men.' One absolutist response to this is to claim that if 'I(ξ,η)' is to be interpreted as an absolute identity relation then it holds between classes of men and not between men. Nothing

1. For this definition see 'Ontological Relativity and Relative Identity', p. 10. (For an equivalent, though more cumbersome, one see 'Identity', p. 10.)

2. 'Identity', p. 10.
ontologically undesirable follows from this because Leeds
does contain classes of men as well as men.¹ But, as Geach
replies², this is simply to rewrite his account of 'I(ξ,η)'.
He did not intend it to hold between classes of men but
between men, and, since he invented the notion, he can
define it as he will. Until the absolutist can show that
there is something incoherent in the notion as Geach defined
it he will have to stick with Geach's account. As Geach
defined it, however, Perry can't give any absolute identity
interpretation at all, for, he claims, 'I(ξ,η)' is simply
equivalent to 'ξ has the same surname as η', when the names
of men fill the place-holders and that 'is clearly not an
identity predicate.'³ Well, it is clearly not an absolute
identity predicate but there is nothing, on present showing,
which prevents it from being a relative identity predicate
and, since it is the only I-predicate of T, it looks as
though the upholders of T will have no option but to reject
the absolute interpretation of their I-predicate and this
concession was no more than Geach wanted to force them to.

A second possible reply to Geach's argument is that
it depends as much upon an ontological interpretation of
the quantifiers as upon absolute identity. Geach himself

¹. Perry, Identity, p. 55.
². 'Ontological Relativity and Relative Identity', p. 11.
³. Identity, p. 55.
rejects this interpretation in favour of substitutional quantification.\(^1\) There seems to be no objection to accepting both substitutional quantification and absolute identity. Hence, even if valid, the argument does no more than prove the undesirability of accepting both absolute identity and an ontological interpretation of the quantifiers (as Quine does): it does not indicate which of these we should give up. But this issue isn't quite so simple for, as Geach explains in his later article, he takes it to be one distinction between a theory and a language that 'a language, or its speaker, need not be ontologically committed to whatever a sentence of the language affirms to exist; but a theory, or its holder, is ontologically committed to whatever a thesis of the theory affirms to exist.'\(^2\) Thus, it seems that Geach would accept the ontological interpretation of the quantifiers in a theory and the substitutional interpretation of the quantifiers in a language. I'm not sure he is correct in doing this for a theory may make existential claims which it could scarcely do if the quantifiers which were used in the expression of such claims carried existential presuppositions. Secondly, there seems


\(^2\) 'Ontological Relativity and Relative Identity', p. 16.
no reason to reject myths as theories in the (presumably) extended sense of 'theory' which Geach is using. Moreover, if we wish to exclude myths, even hard-core theories in physics sometimes have quantifiers ranging over non-existent items like perfect gases and perfectly elastic spheres. This issue is of no direct concern to us and if Geach can support his thesis about the interpretation of the quantifiers then the onus of blocking the argument from ontology will fall entirely upon the interpretation of the I-predicate.

The third absolutist reply is that given by Feldman. Feldman supposes that he used to speak a certain simple language $^2$ $T$ and then came, by and by, to adopt a more complex one $T^+$. He claims that in this case he would be able to drop the existential commitments of $T$ in favour of those of $T^+$. For example, suppose that in $T$ he could not discriminate between $a$ and $b$, he would be committed to the existence of only one entity which was named by both 'a' and 'b'. Later, as his language expands to $T^+$, he is able to discriminate between $a$ and $b$ and is therefore committed to the existence of two entities, one named by 'a'.

---

1. 'Geach and Relative Identity', pp. 553-554.

2. Although Feldman speaks of 'languages' his argument will go through, mutatis mutandis, if 'theories' is substituted. The difference is potentially an important one in view of the previous paragraph.
and another named by 'b'. But he is not committed to a third object, named by both 'a' and 'b', which is a hang-over from the earlier language T. In other words, although our ontology may expand it will not expand indecently.

Geach replies\(^1\) that the relation he envisaged between T and T+ is not historical but set-theoretic. T is a sub-language of T+ and as such users of T+ will be committed to all the existential commitments of T which is but a part of T+: these commitments cannot be repudiated by anyone who still continues to speak T+. To go back to Feldman's example: when we can't distinguish between a and b we are committed to one object named by both 'a' and 'b', when we can distinguish them we have to admit two objects. But, here, Geach's argument becomes obscure. He seems to be claiming that the identity of a and b in T, if it is construed as absolute identity, cannot then be repudiated - hence the hang-over of the third object when T+ is formed. Whereas, on the relative identity thesis, such claims could be repudiated and the hang-over doesn't occur. But he has already distinguished\(^2\) between the relative identity thesis and the view that a predicate is an I-predicate only relative to a given theory (a view which is uncontroversial). Now if the relation between a and b expressed in T is only

---

1. 'A Reply', pp. 557-558. (Geach here follows Feldman in speaking of 'languages' rather than 'theories'.) See also 'Ontological Relativity and Relative Identity', p. 16.

2. 'Identity', pp. 4-5.
relative to $T$, although absolute in $T$, does there really seem any reason why we cannot repudiate our existential commitments in $T$ when we go on to develop $T^+$? Admittedly, the situation envisaged by Feldman is a whole lot simpler: for there $T$ is repudiated and, with it, its existential claims. In the situation envisaged by Geach $T$ is not repudiated but only incorporated into a wider theory $T^+$. But a statement 'I(a,b)' in $T$ is construed as an (absolute in $T$) identity statement relative to $T$-on-its-own. This last clause is essential, for it is admitted by the absolutist that in the wider system $T^+$ 'I(a,b)' might not be construed as an identity statement. Now the existential commitments of $T$ which follow from 'I(a,b)' being an identity statement are commitments of $T$-on-its-own. When this last clause is violated, however, (by the addition to $T$ of predicates to form $T^+$) there seems no reason to retain the existential commitments of $T$-on-its-own. In other words, when we repudiate a theory we repudiate its existential commitments. But when the existential commitments of a theory depend essentially on the theory's not being added to in certain ways, then when we add to the theory in just those ways we are surely justified in repudiating those existential commitments even though we don't actually repudiate any of the theses of the original theory.

Thus, even with both absolute identity and the ontological interpretation of the quantifiers we do not get an indecently Meinongian ontology. Neither are we prevented
from expanding our ideology. Perry\(^1\) supposes a language \(T\) in which no distinction could be made between different tokens of the same type word. In this language the predicate \(I(\xi, \eta)\) is construed as an I-predicate. We then suppose the development of a richer language \(T^+\) by adding to \(T\) the predicate \(K(\xi, \eta)\). \(K(a, b)\) is true iff token \(a\) is more legible than token \(b\). Thus in \(T^+\) \(I(\xi, \eta)\) is not an I-predicate. Now Perry argues that even though we interpret \(I(\xi, \eta)\) as expressing absolute identity, this wouldn't stop us from adding the predicate \(K(\xi, \eta)\) to \(T\), although to make this addition useful we would have to add names for token words as well. This language, i.e., \(T\) plus \(K(\xi, \eta)\) plus names for tokens, he calls \(T++\). By interpreting \(I(\xi, \eta)\) as an I-predicate in \(T\) we do not prevent the development of \(T++\). Of course \(I(\xi, \eta)\) is no longer an I-predicate in \(T++\), but this amounts to no more than the claim that Geach admits to be uncontroversial that the sense of \(I(\xi, \eta)\) is relative to the language in which it is expressed. If all this is right then the absolutist can maintain the twin advantages of expanding his ideology whilst keeping his ontology in check without even having to give up the ontological interpretation of the quantifiers.

In his later article, however, Geach suggests a different version of his argument in which the trouble is not caused by surmen, or better by reduplicating surmen.

---

1. Identity, pp. 43-45; 'The Same F', pp. 194-195.
and men, but by a third type of item: absolute surmen. Absolute surmen are entities for which 'ξ is the same surman as η' expresses a criterion of absolute identity. ¹ At this the argument becomes even more obscure. For a paper and a half Geach has led us to believe that what worries him is that Leeds might, on the absolutist view, turn out to be populated by both men and surmen, but now the trouble seems to be that it might contain absolute surmen as well. Clearly a demographer's nightmare. But the trouble in Leeds is not just over-crowding, but that absolute surmen are logically incoherent and it is this that Geach now attempts to demonstrate: ²

[W]hatever is a surman is by definition a man. Then suppose ... that absolute surmen are in fact men; then since ... the count of surmen comes out smaller than the count of men, absolute surmen will be just some among men. There will, for example, be just one surman with the surname 'Jones'; but if this is an absolute surman, who is a certain man, then which of the Jones boys is he?³

If the single surman with the surname 'Jones' is an absolute surman, then, since the surman with the surname 'Jones' is

1. 'Ontological Relativity and Relative Identity', p. 18.

2. The expression 'criterion of absolute identity' might seem a little puzzling since, so far as I can see, both Geach and I are agreed that there is no such thing. However, it does seem that the absolutist should be able to make out a concept if his theory is to be consistent. In fact, all we need here is that for absolute surmen 'ξ is the same surman as η' expresses absolute identity.

3. 'Ontological Relativity and Relative Identity', p. 18.
a man, the absolute surman will be a man and all is well -
Leeds can easily cope with such men under different sortals.
It is surely only if the surman with the surname 'Jones'
is a family of men (as Perry has been suggesting all along)
that we can't hold both that the surman with the surname
'Jones' is an absolute surman and a man.

But whilst Geach's exposition is dreadfully confusing,
Calvert has restated the argument in a way which gives it
considerable force.¹ We have in theory T and its extension
T+ the I-predicate 'I(ζ, η)' - 'ζ is the same surman as η'
- which we are invited to construe as expressing absolute
identity. The ideology of T cannot distinguish between
different men with the same surname, the ideology of T+
can. The quantifiers of T thus range over a domain of
surmen, those of T+ over a domain of men. Suppose we have
two men both with the surname 'Jones', since we are
construing 'I(ζ, η)' as expressing absolute identity, these
two men are absolutely identical: not merely the same
surman but distinct men (for that is mere relative identity),
but the same absolutely. But in that case they will be
the same man, for they are men and they are identical.²

¹. Relative Identity, pp. 43-44; fn. 41 (p. 111). Geach
in his unpublished comments on Calvert's thesis raises
no objection to Calvert's interpretation - which gives
good reason to think that Calvert has got it right.
². There is no difficulty about having the predicate 'ζ
is a man' even in T. Indeed, the definition of 'I(ζ, η)'
requires it.
This argument will work so long as the notion of a surman is well-made out, as I believe it is. What goes wrong is the attempt to make the relation \( '\xi \text{ is the same surman as } \eta' \) carry more weight than it can bear — namely, that of expressing the notion of absolute identity. But then the same is true of every \( F \)-identity relation, because for each \( F \) we might extend our conceptual resources in such a way as to make \( F \)'s distinguishable with respect to some other general noun. This version of the argument has a lot more plausibility than any of its predecessors.

Yet Geach's conclusion is still not demonstrated. Let me list some of its doubtful assumptions. Firstly, it requires that the quantifiers of \( T \) and \( T^+ \) be interpreted ontologically. I have already said enough to suggest reasons for doubting this. Secondly, to avoid the embarrassment of having distinct men made identical it is merely necessary to relativize the \( I \)-predicate to a theory. The paradox is generated by establishing results in \( T \) and then transferring them over to \( T^+ \). If \( 'I(\xi,\eta)' \) conveyed absolute identity only in \( T \) the paradox could be avoided for in \( T \) the two men called 'Jones' cannot be distinguished and are therefore identical. It is only in \( T^+ \) that we can distinguish them and generate the paradoxical result that two distinct men are one and the same man (in \( T \) we cannot even speak of 'two distinct men'). Clearly the absolutist could hold that \( 'I(\xi,\eta)' \) expresses absolute identity in \( T \), whilst \( 'I^*(\xi,\eta)' \) — \( '\xi \text{ is the same man as } \eta' \) — expresses absolute identity in \( T^+ \).
Against this Geach has only the argument that if T is a proper part of T+ then the predicates which are common to both have the same sense in each. Let us now examine this assumption. In the move from T to T+ we have added predicates which permit different men with the same surname to be distinguished and we have changed our ontology from one of surmen to one of men. As Nelson has remarked on this argument:

'[I]f the move from T to [T+] does bring with it a change of ontologies it is also reasonable to think that at least some of the predicables of T, which all occur in [T+], will have different senses, different dictionary readings, in [T+]. And if this is so it seems neither surprising nor obviously objectionable that a predicable should express [absolute] identity in T but not in [T+].' 1

Moreover, Geach's conclusion that 'I(ξ,η)' has the same sense in T as in T+ jars with his earlier claim that 'what an expression signifies is relative to the language we are using.' 2 If Geach believes this, he should not be unduly surprised if 'I(ξ,η)' expresses absolute identity in T but not in T+. He might want to qualify his claim so that an expression signifies the same in T and T+ when T is a part of T+ but for this qualification he gives no argument. There seems to me no reason why all predicates should retain the same sense when ideologies and ontologies change.

1. 'Relative Identity', p. 248.
2. 'Identity', pp. 4-5.
Of course, Geach might well imagine that the ontology of T contains men as well as surmen, even though the ideology of T could not distinguish between different men with the same surname. Then the move to T+ does not alter the ontology. But such a situation is not, as Nelson points out, one which the (Quinean) absolutist would accept because the ontology of T would contain distinct elements which were indiscernible in T, and appropriate Quinean measures would be taken to cut back the ontology so that only discernible distinct elements were left (effectively this would mean removing men from the ontology of T).

Thirdly, even if we insist that '$I(\xi, \eta)$' has the same sense in T+ as in T we still do not have to follow Geach. As Calvert points out, we could delete all but one man from the equivalence class specified by '$I(\xi, \eta)$' in T. Alternatively, we could, following Perry and Nelson, adopt an ontology of classes of men in T, though '$I(\xi, \eta)$' would not then be the relation '$\xi$ is the same surman as $\eta$'. This move, however, ought to be ruled out on the grounds that it is the relation '$\xi$ is the same surman as $\eta$' that is under discussion.

1. 'Relative Identity', p. 249.
2. Relative Identity, p. 45.
3. 'The Same F', p. 196.
Fourthly, the notion of an absolute surman was coherent in T but incoherent in $T^+$. We are only justified in rejecting the notion \textit{in toto} if we can show that it necessarily carried over from T to $T^+$. This takes us back to the earlier question as to whether the ontological commitments of T must carry over in $T^+$. I see no reason to think that they should.

Despite a great deal of ingenuity it seems that Geach has not produced an argument which forces one to interpret I-predicates as expressing relative identity. However, the lack of a general argument to demonstrate the correctness of $(R)$-relative identity, or even the desirability of accepting it (on grounds of violating some appealing principle) is not unduly worrying. When the notion of identity is in dispute there is very little left undisputed on which to base an argument.
CHAPTER NINE

THE CONSTITUTIVE 'IS'

§9.1 Constitutive uses of 'is'. If we grant that the (R)-relativist can make out a coherent theory which is not subject to irrefutable a priori objections, the rest of the relativist's path seems to be downhill. If he can find but one case of (R) in natural language his theory is established. In the course of the discussion we have already given several examples of such statements, and thus it looks as if our problems are over. However, those who have objected to (R)-relative identity are well-aware of most of the examples we have cited and in each case have sought to evade their force. One way of doing this is to deny that one or both conjuncts of a case of (R) is an identity statement and thence to claim that such examples constitute no problem for the theory of absolute identity which is a theory restricted to identity statements strictly construed and thus not to these other types of statements. In this chapter and the next I want to examine these attempts to cope with examples of (R) within an absolute identity theory. In the next chapter I shall deal with the issues rather more generally, whilst in this chapter I want to consider a particular class of cases - namely those cases which are said to involve the constitutive 'is' rather than the 'is' of identity.
Examples of (R) which are said to involve the constitutive 'is' include the following:

(9.1) Heraclitus jumped into the same river twice, but not into the same water.

(9.2) Two Meccano models may be the same collection of Meccano pieces but distinct models.¹

According to Wiggins, to whom this view is due², in (9.1) the second conjunct and in (9.2) the first, involves the constitutive 'is' because they are paraphraseable as:

(9.3) The river into which Heraclitus jumped the first time was not constituted by the same water as the river into which he jumped the second time.

and

(9.4) This model is composed of the same collection of Meccano pieces as that model.

This, of course, is plausible enough, and Wiggins doesn't simply claim that the possibility of such a paraphrase alone suffices to show that we do not have identities in (9.1) and (9.2):³

---

1. Typically 'collection' (or some equivalent such as 'heap', 'pile' etc.) has to be used as an auxiliary noun in these formations. Also characteristic is the use of a plural sortal in a position corresponding to that of a mass term in sortalized mass terms - another syntactic parallel between mass terms and pluralized sortals.


3. In other cases Wiggins does seem to think that the possibility of a paraphrase is sufficient to rule out the example as an identity statement. Wiggins' general procedure for using paraphrases to get rid of examples of (R) will be considered in 10.3.
I am saying [he writes] that the independent plausibility of this paraphrase, plus the plausibility of Leibniz' Law which would otherwise have to be amended or abandoned, plus the difficulty of amending Leibniz' Law, force us to postulate this distinct sense of 'is'.

By 'Leibniz' Law' Wiggins means here his hybrid formula (1.13) which permits indiscernibility inferences from relative identities. Of course, (1.13) is incompatible with (R). To do anything to validate (1.13) Wiggins must refute all cases of (R), and yet, in doing this, he constantly makes appeals to (1.13) — although he sometimes does it (as in the passage quoted above) by an apparently more innocuous appeal to the 'plausibility' of (1.13) which suggests that (1.13) is independently plausible. This, of course, does not imply that there are no better arguments for the independence of the constitutive 'is' and such arguments will be considered below.

However, before we do this we need to know which group of statements we are talking about, which statements actually employ the 'is' of constitution whether they express identity or no. If we consider the following statements — all of which are similar to the first conjunct of (9.2) — certain features become clear:

(9.5) The desk is the same wood as the bookshelf used to be.

(9.6) The desk is the same plank of wood as the bookshelf used to be.

1. Identity and Spatio-Temporal Continuity, fn. 19 (p. 67).
The covering concept in (9.5) is a mass term, whilst in (9.6)-(9.9) it is a sortalized mass term. Of the five statements (9.7) and (9.9) plainly do not involve the constitutive 'is'. Whether a statement involves the constitutive 'is' has nothing to do with the nature of the covering concept. The important feature seems to be whether we can obtain a paraphrase along the lines of (9.3) and (9.4). With all but (9.7) and (9.9) we can, with these two alone the paraphrase fails. We have to construe the paraphrase fairly widely to ensure that we get an idiomatic sentence. For example, 'The desk is made of the same wood as the bookshelf used to be' is a more idiomatic paraphrase of (9.5) than 'The desk is constituted of the same wood as the bookshelf used to be' and with further examples more glaring anomalies may occur unless we permit some latitude in our paraphrase.¹

Nonetheless, it is difficult to accept that the possibility of this paraphrase is necessary for the constitutive 'is'. Consider (9.8), we clearly have the paraphrase:

(9.10) The desk was made of the same plank of wood as that plank of wood.

or, equivalently,

(9.11) The desk was made of that plank of wood.

But if we turn (9.8) round to form:

(9.12) That plank of wood was the same plank of wood as the desk.

the paraphrase fails:

(9.13) *That plank of wood was made of the same plank of wood as the desk.

But we might have expected that (9.12) would involve the constitutive 'is' if (9.8) did. The reason is, of course, that 'ξ is constituted by η' is not symmetrical, unlike 'ξ is identical with η'. A further reason for rejecting this paraphrase as a necessary condition is that it completely ignores the constitutive use of 'is' in the following statements:

(9.14) The desk is wood.

(9.15) The desk is a plank of wood.

For (9.14) and (9.15) we can use the paraphrase and give the following criterion:
(I) A statement of the form (a) 'a is (det) φ' involves the 'is' of constitution iff (a) can be paraphrased:

\[
'a \text{ is } \begin{cases} \text{constituted} \\ \text{composed} \\ \text{made up} \\ \text{made} \end{cases} \text{ of (det) } \phi'
\]

In (I) 'φ' is to be replaced by general terms in natural language. But it is not statements which satisfy (I) which can be used to form cases of (R). However, given (I) we can now give a criterion for constitutive uses of 'is' in statements, like (9.6), which can be used to form examples of (R):

(II) A statement of the form (a) 'a is the same K as b' involves the constitutive 'is' iff either 'a is (det) K' or 'b is (det) K' satisfies criterion (I).

(II) preserves the intuition that the constitutive 'is' appears in both (9.8) and (9.12). It excludes (9.7) and (9.9) which is what we want. It also makes the constitutive 'is' indifferent as to covering concept. In fact, as we saw in §4.3, cases in which mass terms appear as covering concepts can be analysed away. (II) seems to fit all the cases which Wiggins would want to include as constitutive 'is' cases and should therefore be acceptable to both sides.

It will be convenient to have an expression for those terms which appear in covering concept position in statements satisfying (II). I propose to call them compositional nouns, or rather compositional uses of nouns for it will not
be possible to rule out any noun from playing a compositional role (for example, 'men' in 'The team is composed of men'). The definition I propose is:

The noun 'K' has a use as a compositional noun iff there is a statement of the form (a) 'a is (det) K' such that (a) can be paraphrased:

\[
\text{\texttt{\{'a is\{constituted, composed, made up\}\} of (det) K'.}}
\]

We can now define the circumstances in which a statement of the form 'a is the same K as b' involves the constitutive 'is'. This, of course, does not prove the independence of the constitutive 'is' from the 'is' of identity: it could be that constitutive 'is' statements were just an identifiable sub-class of identity statements.

9.2 The Nature of Constitutivity. The criteria (I) and (II) of §9.1 enable us to define the scope of our problem. Are statements which satisfy (I) and (II) identity statements or not? One further preliminary will be useful and that is a list of the various ways in which constitutivity might be construed. Stephen Voss\(^1\) lists a number of ways in which such a relation could be taken and I shall deal with each in turn. The proposals are the following:

constitutivity is a variably polyadic relation; a relation between an individual and the Lesniewskian sum of its constituents; a relation between an individual and the set

---

of its constituents; a relation between an individual and the physical object its parts compose; and a relation between an individual and the kind of stuff of which it is composed. Whenever possible I'll use the example of a train, a, composed of an engine, b, and carriages c, d, etc. The type of stuff of which a is composed is rolling stock.

Suppose that constitutivity is variably polyadic. In the case where a is made up of an engine and one carriage 'is composed of' is a triadic relation holding between a, b and c. But in a case where a is made up of an engine and two carriages, it is quadratic. 'To put the point summarily, the relation is regarded as being n+1-adic, where n is the number of listed constituents.'¹ There is some doubt as to whether such a theory even gets off the ground, since it is a fairly common presumption that relations cannot be of variable adicity. This view is less commonly explicitly stated, although Patrick Suppes does so.² However, the arguments aren't overwhelmingly convincing and other logicians (e.g. Richard Routley) see no objection to such relations and it will not do to rule out the possibility of such relations out of hand. Clearly


if we adopt such a theory the relation between an individual and its constituents cannot be identity for identity relations necessarily have only two places for individual terms and constitutivity, on this account, may have more than two such places. But then again if this is our theory of constitutivity the examples which gave rise to the puzzles with which we started are hardly likely, in general, to arise. If the relation of the team to the n men who compose it is an n+1 place relation of constitutivity we are hardly likely to confuse this with identity, and we can certainly form no case of (R) with it. There will remain cases where constitutivity is a relation with two places for individual terms: as in 'Cleopatra's Needle is composed of a block of stone' or 'The team is composed of a group of men'. Indeed such cases could always be constructed from cases of variable polyadicity.

This is what Chandler does in what he terms 'the reductive theory of constitutivity'\(^1\) in which the variably polyadic relations are analysed away in favour of relations of definite adicity. Chandler considers a reduction of 'a is composed of b and c' in terms of the dyadic relation 'x is part of y' and gives an English reading. It is clear that a reductive theory can best be expressed in terms of Lesniewski's mereology or Goodman's calculus of individuals.\(^2\)

---

1. 'Constitutivity and Identity', p. 314.

Such a statement as 'a is composed of b and c' could be analysed by two formulae of Goodman's calculus:

\[(9.16) \quad (\forall x)(x \circ a \supset x \circ (b + c))\]

and

\[(9.17) \quad (\forall x)(x \circ (b + c) \supset x \circ a)\]

where '\(\circ\)' is the overlapping relation, and 'b + c' denotes the Lesniewskian fusion of b and c. (9.16) thus reads:

If any individual overlaps a then that individual overlaps the fusion of b and c'. Putting (9.16) and (9.17) together gives:

\[(9.18) \quad (\forall x)(x \circ a \equiv x \circ (b + c))\]

But identity in Goodman's system is given 'in the usual Leibnizian way'\(^1\) by:

\[(9.19) \quad x = y \overset{df}{=} (\forall z)(z \circ x \equiv z \circ y).\]

Hence in Goodman's calculus an individual is identical with the Lesniewskian fusion of its parts.\(^2\) To fit this account out for relative identity we need some substantival covering

---

(Continued from page 260:)

North-Holland, 1962); and Goodman, The Structure of Appearance, pp. 46-56. As elsewhere I have used Goodman's notation in preference to the alternatives.


2. Voss has a slightly different form of this argument. ('The Indiscernibility of Non-Identicals', pp. 5-6.)
concept. In the case of our example we would have:

\[(9.20) \text{The train is the same collection of items of rolling stock as the Lesniewskian fusion of the engine and carriage.}\]

The view that the relationship is between the train, \(a\), and the object which is composed of \(b\) and \(c\) trivially makes the relation identity, for we have:

\[(9.21) \text{The train } a \text{ is the same train as the train composed of } b \text{ and } c.\]

What is more, in this case the '\(\xi\) is composed of \(\eta\)' paraphrase fails for we do not have:

\[(9.22) \text{*The train } a \text{ is composed of the train composed of } b \text{ and } c.\]

Thus no case of the constitutive 'is' as we've defined it occurs here.

The last two theories - that constitutivity is a relation between an object and the set of parts which compose it or the kind of stuff which makes it up - each give us a case of the constitutive 'is'. Whether they also give us a case of the 'is' of relative identity we shall inquire in the next section.

\*9.3 The Alleged Independence of the Constitutive 'is'.

We have already argued in \*4.3 that statements of the form:

\[(9.23) a \text{ is the same } M \text{ as } b\]

can be removed in favour of statements of the form:
(9.24)  a is the same (san + of + M) as b.

and can then be assimilated with other statements with substantival terms as covering concepts. Some statements of the form:

(9.25)  a is the same F as b

will thus be paradigmatically constitutive. We have yet to consider statements with the form:

(9.26)  a is M.

It seems fairly clear that statements of this form are not identity statements. Consider such a statement:

(9.27)  This earring is gold.

Identity relations are symmetrical but if we perform the appropriate operation on (9.27) we get:

(9.28)  Gold is this earring.

which is false even though (9.27) is true. Thus the 'is' in (9.27) fails to preserve symmetry and is thus not the 'is' of identity. Clearly (9.27) satisfies (I) and thus we have a statement which employs the 'is' of constitution but not the 'is' of identity. This admission is not likely

1. Barry Maund has pointed out to me that on a certain (poetic) interpretation (9.28) might be taken as true. It seems to me that on this interpretation 'gold' should be (rather unpoetically) sortalized, and that the question then at issue is whether 'This earring is (a/an + san + of + gold)' preserves symmetry.
to worry the relativist, however, for he can make no use of statements of the form (9.26) in formulating cases of (R). But, for each statement of the form (9.26), we have a statement of the form (9.23). For example, corresponding to (9.27) we have:

(9.29) This earring is the same gold as some gold.

The quantification of 'some gold' is rather tricky but we can quite easily sortalize 'gold' according to the techniques of §4.3 to give:

(9.30) This earring is the same gold as some piece of gold.

And then, of course, we have to sortalize the first occurrence of 'gold' to give a statement of the form (9.24). It is only if Wiggins can substantiate his charge

1. This proposal comes from Tyler Burge. Cf. his 'Truth and Mass Terms', p. 278.

2. Difficult, but not impossible. F.J.Pelletier introduces a non-partitive quantifier 'sm', read 'some' (with weak stress), which operates with mass terms (and plural sortals in much the same way as the partitive quantifier 'some' in English (pronounced with primary stress) operates with count+ nouns (and mass terms where a 'kind of' sortalization is understood). See F.J.Pelletier, 'On Some Proposals for the Semantics of Mass Nouns', Journal of Philosophical Logic, vol. 3, 1974, p. 95. The two uses of 'some' is noted, for example, by H.A. Gleason, An Introduction to Descriptive Linguistics, (New York: Holt, 1955), p. 145.
when all this is done that the relativist loses his examples of (R).

We can also sortalize 'gold' in (9.27) to give:

(9.31) This earring is a piece of gold.

(9.31) can be assimilated with other statements of the form:

(9.32) a is an F.

And, just as statements of the form (9.26) had a corresponding statement of the form (9.23), so statements of the form (9.32) have a corresponding statement of the form:

(9.33) a is the same F as some F.

Since some statements of the forms (9.26) and (9.32) use the constitutive 'is' but not the 'is' of identity we cannot treat the constitutive 'is' as a sub-case of the 'is' of identity. But for Wiggins to prove his point he would have to show that no use of the constitutive 'is' formed an identity statement. It is only statements of the form (9.25) that we can use to form examples of (R) and for each statement of the form (9.26) or (9.32) there is a statement of the form (9.25) which still employs the constitutive 'is'. We have now to consider whether these statements are also relative identity statements. The best procedure is to see if they violate any of the formal properties of relative identity relations.
The most popular argument to show that:

(9.34) This earring is the same piece of gold as some piece of gold.

is not an identity statement is that if the earring and the piece of gold were identical they would both come into and pass out of existence at the same time.\(^1\) Clearly the earring might be beaten out in which case the earring would cease to exist though the piece of gold would be preserved and, of course, the piece of gold must antedate the earring as the earring was made from the piece of gold. This argument invokes what Wiggins calls 'The Life Histories Principle', namely that if \(a\) and \(b\) are identical they must have the same life history.\(^2\) However, I prefer not to use the Life Histories Principle in discussing matters that have a bearing on (R) since it is a special case of Leibniz' Law and is thus thrown into question if (R) proves to be true. It does not follow from the fact

---


2. *Identity and Spatio-Temporal Continuity*, p. 31. In fact, we'll have to take more care over the formulation of the principle if we are to avoid substitution within quotations, for if it is part of the life history of the morning star that its beauty was extolled by Julius Caesar on the Ides of March the same event does not form part of the life history of the evening star.
that a and b are F-identical that they have the same life histories when they may be G-distinct. Apart from the Life Histories Principle other arguments based on Leibniz' Law can be used to prove that a whole cannot be identical with its constituents. For example, we register a car but not its parts, hence, by Leibniz' Law, the two are distinct.

However, the Life Histories Principle (properly formulated) may have independent plausibility and, moreover, there may be principles weaker than the Life Histories Principle, which would also rule statements satisfying (II) out of the class of identity statements. To give this argument the best chance it is advisable to consider the weakest principle which would be sufficient for this. The Life Histories Principle may be formulated (assuming appropriate caveats against quotations):

(LHP₁) If x and y are identical then x has the same life history as y.

A weaker version, also sufficient for distinctness, could be:

(LHP₂) If x and y are identical then x is created at the same time as y and x goes out of existence at the same time as y.

And finally, just half of this:

(LHP₃) x cannot be outlasted by anything with which it is identical.

If (LHP₃) is true then the constitutive 'is' is not the 'is' of identity. What we cast round for is a relativist
argument for \( \text{LHP}_3 \).

The best place to look is in \( \text{RLL} \). Consider:

\[ (9.35) \quad \text{The jug is the same collection of pottery pieces as the collection of pottery pieces on the table.} \]

Suppose that at time \( t_2 \) \((t_1 < t_2 < t_3)\) my unfortunate jug meets its untimely end. We may then advance the following argument. Given the premiss:

\[ (9.36) \quad (\forall x)(\forall t)[F(x,t) \rightarrow \exists t(x,t)] \]

we get:

\[ (9.37) \quad \text{The collection of bits on the table is a collection of bits at } t_3 \text{ entails the collection of bits on the table exists at } t_3. \]

It is accepted by the relativist that the jug is a collection of bits. Thus, if \( (9.35) \) is an identity statement, from \( (9.37) \) by \( \text{RLL} \) we get:

\[ (9.38) \quad \text{The jug exists at } t_3. \]

But the jug ceased at \( t_2 \) and therefore did not exist afterwards. Thus we get the contradiction that the jug both existed and did not exist at \( t_3 \). Therefore, it is claimed, \( (9.35) \) isn't an identity statement.

The trouble with this argument, of course, is the premiss \( (9.36) \) and I doubt that it will have many supporters. Orthodox logicians will object that \( '\xi \text{ exists}' \) is not a predicate and hence may not be substituted for \( '\phi(\xi)' \) in \( \text{RLL} \). On the other hand, unorthodox logicians, who accept that \( '\xi \text{ exists}' \) is a predicate, will argue that the
entailment in (9.36) doesn't hold and that, in general, 
'F(a)' does not entail 'a exists' (since, e.g., 'a is a 
unicorn' does not entail 'a exists'). So the argument 
fails; and it is difficult to see what argument based on 
(RLL) could be mounted to replace it.

We may, however, seek to use (RLL) in another way. 
This argument capitalizes on a remark of Stephen Voss's 
in dealing with the view that constitutivity is a relation 
between an object and the set of its parts. He writes:
'But surely we are under no obligation to suppose that 
such an abstract object as a set is located just where 
it members are.'¹ Now Voss may be making one of two 
claims here: he could be claiming either that sets are 
not located where their members are because they are 
located somewhere else; or he could be claiming that they 
are not located where their members are because they are 
not located anywhere. Now if we have:

(9.39) The jug is the same set of pottery pieces as 
the set of the pottery pieces on the table.

then, on the second interpretation, if being a set entails 
having no location it follows from (RLL) that the jug 
has no location either. Plainly this is false. On the 
other interpretation, however, both the jug and the set 
of pottery pieces will have a location - but not the same 
location. However, our remarks on (RLL) in §8.2 suggest

---

¹ 'The Indiscernibility of Non-Identicals', p. 2.
that they should both have the same location. Either way, it may be argued, the jug cannot be the same set of pieces as a set of pieces.

But what does this argument show? Simply that we cannot combine a relative-identity account of constitutivity with an account in terms of the relation between an object and the set of its constituents (together with some assumptions about sets). There are several ways out for the relativist: he could deny the (so far unargued) assumptions about sets — but to take up that issue would carry us far from our goal. Alternatively he could simply drop the term 'set' in favour of 'collection' where collections behave exactly like sets except that they are located where their members are.¹ This is surely an entirely reasonable move since something is certainly there (their Lesniewskian sum, for example). It is well to remind ourselves of our overall enterprise here. It is the absolutist who has to force the relativist to give up treating constitutivity as a relative identity relation, and he cannot do this if his arguments appeal to principles to which the relativist is not committed — any more than he can do so if he appeals to principles to the denial of which the relativist is committed. The absolutist can rule out such cases of (R) as (9.1) and (9.2) only if he can show that on any interpretation of constitutivity it is not an identity (i.e., by showing that there is no coherent

¹ The sense of 'collection' already mentioned on page 115n, above.
identity account of constitutivity for the relativist to mount). This he has not done so far.

If (RLL) is too weak a principle to permit the sort of derivation the absolutist wanted, it seems he can do better with the other formal properties of identity: reflexivity, symmetry and transitivity. Consider (9.35), if the jug is the same collection of pottery pieces as that collection of pottery pieces then that collection of pottery pieces is certainly the same collection of pottery pieces as the jug. So symmetry seems to be preserved. Of course, symmetry is not preserved by the 'if the jug is composed of n' paraphrase of (9.35) and thus is not an identity statement. But from this it doesn't follow that (9.35) is not an identity statement and we are interested in (9.35) not paraphrases of it which cannot be used to form examples of (R). Reflexivity is clearly satisfied by (9.35) and its paraphrase: the jug both is, and is composed of, the same collection of pottery pieces as itself.

Transitivity gets us a bit further. Consider Cleopatra's Needle which gets corroded away by air pollution and is replaced at time t_2 by another block of stone of similar dimensions.² Let us call the block

1. The general issues are discussed below in ¶10.3.

2. The example, but not the argument, was first suggested by Linsky in his Critical Notice of Reference and Generality (Mind, vol. 73, 1964, p. 579) and was developed by Wiggins (as devil's advocate) in Identity and Spatio-Temporal Continuity, p. 8.
of stone of which it was composed at time \( t_1 \) \((t_1 < t_2)\)
'block of stone \( X \)'; and the block of stone which replaced the original, 'block of stone \( Y \)'. Then we have at time \( t_3 \) \((t_3 > t_2)\):

\[(9.40)\] Cleopatra's Needle was the same block of stone as block of stone \( X \).

\[(9.41)\] Cleopatra's Needle is the same block of stone as block of stone \( Y \).

But:

\[(9.42)\] Block of stone \( X \) is not the same block of stone as block of stone \( Y \).

Assuming each statement involves the 'is' of identity we symbolize these respectively as:

\[(9.40a)\] \( b =_F a \)

\[(9.41a)\] \( b =_F c \)

\[(9.42a)\] \( a \not= _F c \)

Given symmetry, i.e.,

\[(RS)\] \( b =_F a \rightarrow a =_F b \)

and transitivity, i.e.,

\[(RT)\] \( (a =_F b \& b =_F c) \rightarrow a =_F c \)

we can derive a contradiction. Given (RS) and (9.40a) we get:

\[(9.43)\] \( a =_F b \).

The conjunction of (9.41a) and (9.43) gives us the ante-
ecedent of (RT) and thus:

(9.44) \ a \neq_F c

The easiest way to avoid the contradiction which results from conjoining (9.44) with (9.42a) is to claim that at least one of (9.40)-(9.42) is neither an identity nor a distinctness statements, and thus that at least one of these statements is incorrectly formalized by (9.40a)-(9.42a). Now we can exempt (9.42) from blame for it is clearly a distinctness statement and is clearly correctly formalized by (9.42a). Hence either (9.40) or (9.41) is not an identity statement. There is no ground for preferring one to the other and therefore neither are identity statements, though both involve the constitutive 'is'. Hence the constitutive 'is' is not a form of identity relation.

However, tenses cause a difficulty for this argument. (9.40) is past tense whilst (9.41) is present, in view of the fact that the whole argument hinges on just this difference we cannot simply gloss over it. In particular, if (9.41a) is the correct symbolization of (9.41) - i.e., a correct symbolization of a present tense identity statement - it then appears that (9.40a) is not the correct symbolization of (9.40) which is past tensed.¹

¹. I owe this point to Richard Routley.
Assuming that (9.41a) is correct for (9.41) we may symbolize (9.40) in a way which marks the tense difference thus:

\[(9.40b) \quad b \equiv_f a.\]

(This could be made more precise by actual reference to times - which could be achieved by attaching further indices to the identity sign - but for present purposes this is enough.) But if (9.40b) is the correct form, we can no longer expect transitivity to hold because transitivity is given by (RT) and not by:

\[(9.45) \quad (a =_f b \& b \equiv_f c) \Rightarrow a =_f c\]

The point is of wider significance than the issue of the constitutive 'is' for if we ignore the tense of identity statements in stating transitivity from the fact that Nixon was President and Ford is President we could prove that Nixon is Ford - which would cause more than logical consternation were it true. Absolutists are inclined to say that temporally restricted identity statements are not really identity statements or do not express absolute identity.\(^1\) This, of course, depends upon what you mean by 'real identity' or 'absolute identity'

---

1. For example, Gabbay and Moravcsik, 'Sameness and Individuation', p. 514n; Dummett, *Frege*, p. 571. (Dummett offers a particularly bizarre alternative; namely that the President was 'realized' by Nixon. The notion of 'realization' is completely unexplicated and is certainly not the ordinary one. It is, I claim, one of the most important advantages of (R)-relative identity that it obviates the need for an immense range of such doubtful ad_hoc expedients.)
but if the absolutist doesn't want to include them then he is obliged to offer us an alternative account, and this he rarely does. It is surely to the relativist's credit that his theory covers more ground than the classical theory.

The problem about marking tenses in the identity statement can be removed by rewriting the statement in Priorese. This involves keeping the identity relation present tensed but putting it within the scope of a tense operator (alternatively: within the scope of the realization operator $R_t$). In Priorese (9.40) becomes:

\[(9.40c) \quad \text{It was the case that}: (b =_f a).\]

But now the 'It was the case that' in (9.40c) is effectively an intensional operator and substitutivity will not be permitted within its scope.\(^1\)

The absolutist, however, can mount another argument similar to the one just given which doesn't give rise to any troubles about tenses. The argument is due to Prior who uses it for rather different purposes. It deals with the splitting of unicellular animals and (allegedly) 'easily imaginable' cases of 'conscious organisms which divide in two and retain after division a clear memory

---

The conscious organisms I shall ignore as they raise extraneous problems and I shall concentrate on the amoebas. Let a be such an amoeba which splits at t into two, b and c, each of which is identical with a but not with each other. Prior's argument in its original form runs:

2. Ibid., pp. 81-82.
In seeking a way out of this paradox we are subject to two constraints: we cannot reject either the symmetry or the transitivity of identity and we cannot deny that two distinct amoebas are produced from the fission of the original. What we have to deny then is at least one of the identity relations asserted in [3] and [4]: in other words, we have to deny that the original amoeba is identical with both of its progeny. But we have no grounds for preferring one progeny to the other as the heir of its parent's identity; thus we should reject the identification of either with its parent. Hence we deny lines [3] and [4] of the argument. Moreover, we have good grounds for denying them because what we have in each case is the 'is' of constitution: amoebas b and c share with a the protoplasm of which they are composed and on this hangs the identity claim.¹

But this last claim moves too far too fast and loopholes are left in the argument. I grant that at least one of lines [3] and [4] must be false,² and that

---

¹. This position has been argued by Jack Nelson, 'Prior on Leibniz's Law', Analysis, vol. 30, 1969/70, pp. 92-94.
if one of them is false there is every reason to suppose that the other is as well. But the grounds for asserting [3] and [4] amount to much more than the sameness of protoplasm of a and b and of a and c: both b and c are spatio-temporally continuous (in a weak sense) with a and, what's more, we could use 'amoeba' as a covering concept throughout the argument instead of 'piece of protoplasm'. The fact that all the identity statements in the argument could be covered by the sortal 'amoeba' (which does not in these cases have a compositional use) indicates that more is in question here than just the constitutive 'is', for the same problem arises when there is no trace of the constitutive 'is' in [3] and [4]. Moreover, it could be argued, that the constitutive 'is' is not, in fact, involved in [3] and [4] for it is surely not true that:

(9.46) a is the same piece of protoplasm as b

and

(9.47) a is the same piece of protoplasm as c

for b consists of only half the piece of protoplasm of which a consists and similarly for c. In other words, a is not the same amoeba as b or as c, but neither does it consist of the same protoplasm as either. The relation between a and b cannot, then, be represented by identity, but neither can it by the 'is' of constitution. The reconstruction of Prior's argument thus fails to touch the question at issue here. What it shows is that (weak)
spatio-temporal continuity and intersection of protoplasm are not jointly sufficient for amoeba-identity, but neither are they for man-identity (vide. Siamese twins).

Nonetheless we can construct an argument in which the situation is less clouded by other issues. The vexed question of the ship of Theseus provides us with such an argument. Hobbes states the problem clearly:

For if, for example, that ship of Theseus, concerning the difference whereof made by continued reparation in taking out the old planks and putting in new, the sophisters of Athens were wont to dispute, were, after all the planks were changed, the same numerical ship it was at the beginning; and if some man had kept the old planks as they were taken out, and by putting them afterwards together in the same order, had again made a ship out of them, this, without doubt, had also been the same numerical ship with that which was at the beginning; and so there would have been two ships numerically the same, which is absurd.¹

Let us call the original ship Theseus I, the ship which resulted from the plank-by-plank replacement of Theseus I, Theseus II, and the ship that resulted from the labours of the man who stowed the old planks away, Theseus III. The following seem to be unassailable:

(9.48) Theseus I is spatio-temporally continuous with Theseus II.

(9.49) Theseus I is the same collection of planks as Theseus III.

(9.50) Theseus II is not the same ship as Theseus III.

At least one of these is neither an identity statement nor a distinctness statement nor provides grounds for an identity or distinctness statement. (9.50) clearly is a distinctness statement and can't be rejected in this way. That leaves (9.48) and (9.49). The trouble now is that each of these involves different principles and the question of which to reject might not be clear cut. If the constitutive 'is' is independent of the 'is' of identity then, of course, we have good reason for rejecting (9.49). It might be argued that we have good reason for rejecting (9.49), even without the constitutive 'is', because Theseus I and Theseus III cannot be spatio-temporally traced under covering concept 'ship' and found to coincide. But this appeal is defective on two grounds: Firstly, it begs the question, for Theseus I and Theseus III can be spatio-temporally traced under the covering concept 'collection of planks' and found to coincide. Secondly, spatio-temporal continuity under a non-compositional sortal covering concept is not, for artefacts, a necessary condition for the ascription of identity: watches may be taken to bits and the same watch reconstructed from the parts. On the other hand, if spatio-temporal continuity was a sufficient condition for the ascription of identity we would be able to accept (9.48) as grounds for an identity statement and hence be forced to reject (9.49) - but, though I can't give entirely convincing counter-
examples, I'm not sure that this principle of the sufficiency of spatio-temporal continuity is correct. Moreover, unless we have the independence of the 'is' of constitution already, I can't see why we are entitled to give preference in formulating this principle to non-compositional sortals. At any rate it seems to me that the argument for the independence of the constitutive 'is' will not be conclusive until we find a case in which we have to reject as an identity statement, a statement involving the constitutive 'is'. And this, I submit, the present example doesn't give us.

It is, however, possible to construct an example in which to preserve transitivity we apparently have to reject one (or both) of two statements as identity statements when both involve the constitutive 'is'. I will introduce such a case on the back of the ship of Theseus example. Suppose that we can identify Theseus I with the set of planks which make it up - this will be necessary if we are going to identify Theseus I with Theseus III on account of their being composed of the same set of planks - in other words, let's assume that the 'is' of constitution is (sometimes) just a form of identity. The 'proof' that it is independent then proceeds by deriving a contradiction from our assumption. We have:

(9.51) Theseus I is the same set of planks as the set of planks which composes Theseus I.

And this, by our assumption, is an identity statement. But
on another level of analysis we could talk not of a set of planks but of a set of cellulose molecules and claim as a true identity statement:

\[(9.52) \text{Theseus } I \text{ is the same set of cellulose molecules as the set of cellulose molecules which composes Theseus } I.\]

Then, with symmetry and transitivity, we should have:

\[(9.53) \text{The set of planks which composes Theseus } I \text{ is identical with the set of cellulose molecules which composes Theseus } I.\]

But (9.53) is certainly false because for sets to be identical they have to have the same members - a condition which (9.53) clearly fails. Therefore, at least one of (9.51) and (9.52) must be rejected as an identity statement. But why should we prefer one level of analysis to the other? In truth, it seems that we have no grounds for choosing to reject one or the other. Should we not therefore reject them both?

The answer I think is 'No'. In fact, we don't have to reject either of them because transitivity for relative identity is given by (RT) whilst what we get from (9.52) and (9.51) is not the antecedent of (RT) but '\(a =_F b \land b =_G c\)' and from this there can be no inference along relativist lines to the conclusion that '\(a =_F c\)' or that '\(a =_G c\)'. Moreover, this points up another difficulty

---

1. This argument is given by H.S. Chandler, 'Constitutivity and Identity', pp. 314-315.
with (9.53) for it is an identity statement in which no covering concept is given. The absolutist urges 'set' as an appropriate covering term so that we have:

\[ (9.53a) \quad \text{The set of planks which composes Theseus I is the same set as the set of cellulose molecules which composes Theseus I.} \]

However, there is a difficulty here for 'set' is not generally a substantival term and may not be acceptable to the relativist. It seems to me that in certain uses (i.e., when the members of both sets fall under given sortals) 'set' is substantival (by virtue of the substantival term which covers the members of the set). We can, at any rate, see that (9.53a) is clearly false since we can identify each member of the set of cellulose molecules and the set of planks under a substantival term and determine set-identity or set-distinctness by the standard principle (4.20). Even if we wish to exclude 'set', however, there are alternatives which quite clearly fall within the group of substantival dummy sortals. For example, 'set of cellulose molecules' gives:

\[ (9.53b) \quad \text{The set of planks which composes Theseus I is the same set of cellulose molecules as the set of cellulose molecules which composes Theseus I.} \]

And (9.53b) is true and, moreover, we cannot exclude the possibility that it is an identity statement (at least until the independence of the constitutive 'is' is established). Alternatively 'set of planks' is substantival, and gives:
The set of planks which composes Theseus I is the same set of planks as the set of cellulose molecules which composes Theseus I.

(9.53c) is false for 'set of planks', though in covering concept position is not a covering concept since a set of cellulose molecules is not a set of planks. But this does not worry the relativist for (9.53b) and (9.53c) can be conjoined to give a pretty (unexceptionable) case of (R). Alternatively, if we accept 'set' in (9.53a) as an adequate completing concept (as I think we ought) we can combine (9.53a) with (9.53b) to give another example of (R). Of course, there is still Voss's objection on grounds of locatability to using 'set of Fs' or 'set' as covering concept but we can redeploy our earlier counters to this objection. Thus, if we permit (R) and exercise appropriate care in choosing covering concepts, symmetry and/or transitivity does not break down for such examples even if we don't have the independence of the constitutive 'is'.

This also solves the hoary old problem of the ship of Theseus because the relativist will be able to hold

(9.54) Theseus I is the same collection of planks as Theseus III.

as a true identity statement, together with

(9.55) Theseus I is not the same ship as Theseus III.

as the true denial of an identity statement. It seems to me that only the (R)-relativist can preserve transitivity without recognizing the independence of the constitutive
'is'; I see no other escape from the argument presented by Chandler. The relativist thus has to his credit not only a perfectly general and completely intuitive account of constitutivity but simple solutions to two antique puzzles: the ship of Theseus¹ and the bath-water of Heraclitus. I shall argue in Chapter Ten that it also solves a number of equally puzzling but less time-honoured problems.

Christopher Kirwan, so far as I know, is alone in having considered this solution to Hobbes' problem.² However, he rejects the solution in favour of Wiggins' unargued constitutive 'is' as a result of two invalid arguments. He holds that the relativist is committed to 'two absurdities: that [Theseus I] and [Theseus III] are the same and both of them ships, yet not the same ship; and that [Theseus I] and [Theseus II] are the same, and [Theseus II] and [Theseus III] the same, yet [Theseus I] and [Theseus III] are not the same (not the same anything)'³


3. Ibid., p. 58.
In fact, neither claimed 'absurdity' is really absurd. The first, which appears to rely on some variant of the Fregean analysis, amounts to a dogmatic denial of even the weakest versions of (R) and, far from being absurd is a fairly obvious truth: for two things might both be ships and not the same ship but the same colour. The second is merely a failure to use relative identities in stating transitivity. The root cause of Kirwan's mistakes is a tendency to lapse into absolutist principles whilst discussing a relativist solution: not surprisingly relative identities do not satisfy absolute identity principles.

A similar argument to Chandler's has been suggested to me by Peter Røper. Like Chandler, Røper attempts to show that the constitutive 'is' fails transitivity. Consider a circle, C, which can be divided up one way into two areas, A and B, and in another way into D and E, each different from A and B. We have, therefore:

\[
\begin{align*}
(9.56) & \quad \text{C is composed of A and B} \\
(9.57) & \quad \text{C is composed of D and E.}
\end{align*}
\]

Now assume that constitutivity is an identity relation: given symmetry and transitivity of identity we can deduce a contradiction. If (9.56) and (9.57) are identities we have:

\[
\begin{align*}
(9.56a) & \quad C = (A \text{ and } B) \\
(9.57a) & \quad C = (D \text{ and } E)
\end{align*}
\]

but we also have, it is claimed,
(9.58) \[(A \text{ and } B) \neq (D \text{ and } E)\]

But from (9.56a) and (9.57a) with symmetry and transitivity we have:

(9.59) \[(A \text{ and } B) = (D \text{ and } E)\]

Hence to avoid the contradiction we have to deny that (9.56) and (9.57) license (9.56a) and (9.57a) respectively; i.e., deny that constitutivity is a form of identity.

This way of setting up the problem masks an important ambiguity in (9.56) and (9.57). If this ambiguity is brought into the open we get two parallel arguments for the independence of the constitutive 'is' neither of which is valid. On the one hand, we might be talking about unions of areas and on the other about sets of areas. The relativist demand for covering concepts for (9.56a), (9.57a), (9.58) and (9.59) makes this clear.

Suppose, first, that we are talking about unions of areas, so that (9.56) amounts to 'The area, C, is composed of the area A \cup B.' In this case (9.56a) and (9.57a) become, respectively:

1. 'Area' is a (D,) completing concept, since it is a substantival dummy sortal by virtue of the existence of conventional units of area. (Cf. Wiggins, Identity and Spatio-Temporal Continuity, p. 60.) Use of 'area' (and likewise terms like 'weight', 'length', 'speed', etc.) as completing concepts brings up the curiously neglected issue of what might be termed 'quantitative identity'. I see no reason why quantitative identities may not be included within the relativist theory I'm proposing.
\[(9.56b) \quad C = \text{area} \ (A \cup B)\]

\[(9.57b) \quad C = \text{area} \ (D \cup E)\]

But then we don't get our contradiction, for clearly

\[(9.60) \quad (A \cup B) = \text{area} \ (D \cup E)\]

is true. Thus if we take 'area' as our covering concept, and hold that (9.56) and (9.57) express relationships between the circle and the union of its component parts we get no contradiction.

To give (9.58) any plausibility, however, we have to be talking about sets of areas: and clearly the set of areas \(\{A,B\}\) is a different set from the set \(\{D,E\}\). But then we have to use the same covering concept throughout the argument in order to form the antecedent of (RT). In this version the argument runs:

\[(9.56c) \quad C = \text{set} \ (A,B)\]

\[(9.57c) \quad C = \text{set} \ (D,E)\]

By transitivity and symmetry, therefore

\[(9.58a) \quad \{A,B\} = \text{set} \ (D,E)\].

But we know that

\[(9.59a) \quad \{A,B\} \neq \text{set} \ (D,E)\]

Hence, a contradiction.
But this argument runs from false premisses because (9.56c) and (9.57c) are not true. It is not the case that the circle, C, is the same set as either \{A,B\} or \{D,E\}. Either C is a set or it is not. If it is, it cannot be the same set as \{A,B\} or \{D,E\}, for \{A,B\} and \{D,E\} have two members and \{C\} has only one. On the other hand, if C is not a set, then C is not the same set as any set, that is, 'set' is not a covering concept for (9.56c) and (9.57c) and thus neither can be true.

In dealing with arguments of this kind even authors who accept the indiscernibility of identicals seem driven towards (R) - without quite realizing it. An example is the following argument from Chandler. ¹

Consider two regions \(r_1\) and \(r_2\), four times \(t_1, \ldots, t_4\), and six particles \(p^1, \ldots, p^6\) distributed as follows:

\[
\begin{array}{cccc}
  t_1 & t_2 & t_3 & t_4 \\
  r_1 & (p^1, p^2, p^3) & (p^1, p^2, p^4) & (p^1, p^5, p^4) & (p^6, p^5, p^9) \\
  r_2 & (p^4, p^5, p^6) & (p^3, p^5, p^6) & (p^3, p^2, p^6) & (p^3, p^2, p^1) \\
\end{array}
\]

An 'alphe' is a physical object composed of three particles and can be identified by the spatial region they occupy: i.e., if a group of three particles moves from one region to another the original alphe is destroyed and a new one created - there are two alphes, not one. On the other hand, if the constituent particles are replaced the alphe remains the same - so long as there are three particles. An alphe

¹ 'Constitutivity and Identity', pp. 316-317.
may thus be defined as a group of any three particles occupying a given region of space. An aggregate of particles, however, remains the same only so long as its constituent members do. Thus, in the situation supposed, we have two alphas and six aggregates of particles. Chandler's argument runs (where 'the aggregate of p⁴ plus p⁵ plus p⁶' is written \( \text{Agg}(p⁴, p⁵, p⁶) \)):

\[
\begin{align*}
(9.61) & \quad \text{The alphe in } r_1 \text{ at } t_4 \text{ was in } r_1 \text{ at } t_1. \\
(9.62) & \quad \text{Agg}(p⁴, p⁵, p⁶) \text{ was not in } r_1 \text{ at } t_1. \\
(9.63) & \quad \text{Hence, by the indiscernibility of identicals, the alphe in } r_1 \text{ at } t_4 \text{ cannot be one and the same as } \text{Agg}(p⁴, p⁵, p⁶). 
\end{align*}
\]

The argument, as it stands, is a non-starter for the relativist because of its appeal to the indiscernibility of identicals. But it can be reformulated to avoid this:

\[
\begin{align*}
(9.61a) & \quad \text{The alphe in } r_1 \text{ at } t_4 \text{ is the same aggregate of particles as } \text{Agg}(p⁵, p⁶, p⁴). \\
(9.62a) & \quad \text{The alphe in } r_1 \text{ at } t_4 \text{ was the same aggregate of particles as } \text{Agg}(p⁷, p⁸, p⁹). \\
(9.63a) & \quad \text{Agg}(p⁶, p⁵, p⁴) \text{ is not the same aggregate of particles as } \text{Agg}(p⁷, p⁸, p⁹). 
\end{align*}
\]

Given the transitivity and symmetry of identity not all of these can be true hence we reject constitutivity as an identity relation. Of course, this argument fails for the same reason as the argument about Cleopatra's Needle fails: it does not take account of tenses. But Chandler proposes a different rewriting as he is anxious to preserve the indiscernibility of identicals and this takes him close to (R) although he backs away at the last moment. He claims
that what (9.61) and (9.62) amount to are:

(9.64) The alphe in \( r_1 \) at \( t \), has the property of being something which, if traced according to the rules for identifying alphes, is traceable to the alphe in \( r_1 \) at \( t_1 \).

(9.65) \( \text{Agg}(p^4, p^5, p^6) \) does not have the property of being something which, if traced according to the rules for identifying alphes, is traceable to the alphe in \( r_1 \) at \( t_1 \).

But now (9.65) is false for \( \text{Agg}(p^4, p^5, p^6) \), if traced according to the rules for tracing alphes, does lead back to \( r_1 \) at \( t_1 \) - for alphes don't move. On the other hand, if we traced \( \text{Agg}(p^4, p^5, p^6) \) back according to the rules for identifying aggregates we get:

(9.66) \( \text{Agg}(p^4, p^5, p^6) \) does not have the property of being something which, if traced according to the rules for identifying aggregates, is traceable to the alphe in \( r_1 \) at \( t_1 \).

(9.66) is true but there is no conflict between it, (9.64) and the indiscernibility of identicals. 'Why,' Chandler asks, 'can't one and the same thing be traceable to one region, if traced according to one set of rules, and traceable to another region, if traced according to a different set?'

This, of course, looks very similar to (R) but Chandler does not go the whole way because he is not prepared to accept (9.64), (9.65) and (9.66) as the basis for identity statements. But this is surely implausible.

---

1. Ibid., p. 317.
for according to the identity criteria which Chandler explicitly defines for alphes and aggregates (9.64) simply states necessary and sufficient conditions for:

\[(9.67) \text{ The alphe in } r_1 \text{ at } t, \text{ is the same alphe as the alphe in } r_1 \text{ at } t_1.\]

which is an alphe-identity statement. Likewise, (9.65) states necessary and sufficient conditions for:

\[(9.68) \text{ } \text{Agg}(p^a,p^b,p^c) \text{ is not the same alphe as the alphe in } r_1 \text{ at } t_1.\]

and (9.66) for:

\[(9.69) \text{ } \text{Agg}(p^a,p^b,p^c) \text{ is not the same aggregate as the alphe in } r_1 \text{ at } t_1.\]

which are distinctness statements for alphes and aggregates respectively. That (9.68) is false and the others true simply indicates that we have here another example of (R).

In considering cases like this the usefulness of a relative identity theory can be demonstrated. It provides a relatively simple and entirely plausible account of issues which otherwise appear intolerably murky and confused. In the next chapter I shall show that it has similar advantages in areas which have nothing to do with constitutivity.
%10.1 The Five Ways of David Wiggins. Not all cases of (R) involve the constitutive 'is': conjunctions of the right form occur in different circumstances throughout natural language. I've already argued that the absolutist's attempts to prove the relative identity theory incoherent are failures. Given this, the absolutist has to provide a convincing alternative account for every example of (R) that the relativist puts up. There are several things which might be done here and which would build up an absolutist case of steadily increasing strength. (1) The absolutist must at least demonstrate that he can provide an alternative absolutist account of each example of (R). If even this proves impossible then there will be no option but to reject absolute identity as an adequate account of identity relations in natural language. (2) Assuming that the absolutist can provide an alternative to (R), he could further show that his account was preferable to (R) in that it preserved independently plausible principles which the relativist would be committed to denying in order to keep his example in play. (Conversely, of course, the relativist could argue that his account was preferable because the principles which the absolutist appealed to in his alternative were independently implausible.) (3) The absolutist could
show that in order to preserve the principles to which the relativist was committed one had to adopt the absolutist account. This would demonstrate that the relativist account of some (or all) examples of (R) was inconsistent.

(Conversely, the relativist could show that the absolutist's account of certain cases was inconsistent.) Of these three levels of argument, I see no way in which the third level may be reached. The relativist theory is, I believe, an entirely consistent theory and in no case is the relativist forced to rely on absolutist principles. (Since I am more concerned here to demonstrate the potentialities of relative identity than to show how the absolute theory is mistaken, there may be some case in which the absolutist relies on relativist principles—but I doubt it.) I think the best the absolutist can do is to validate his theory at the first level by showing that he has some alternative analysis, consistent with classical identity principles, for each example of (R). On the second level, I think the relativist has a good case against the absolutist, and can show that some of the principles to which the absolutist appeals in his treatment are implausible. The difficulty with argument at this level is that, if identity is in question, there are very few independent principles left to which to appeal for neutral help one way or the other. In arguing, therefore, that the principles to which the absolutist appeals are implausible I shall, to a large extent, be arguing for the plausibility of relativist principles themselves.
As a preliminary to dealing with the examples, Wiggins lists five ways in which \( a \equiv_G b \) might be false. The first way (actually Wiggins' second) occurs when \( a \) is not just not the same \( G \) as \( b \) but not the same anything as \( b \). Here we have a case where

\[(10.1) \quad (\forall \delta) \sim (a = \delta \ b)\]

In fact, there are two subcases: one in which \( G(a) \) and \( G(b) \) are true and one in which they are not. In neither case, however, can we have a case of (R). Thus there is no argument when \( a \equiv_G b \) is false in this way.

The second case is one we have already considered and put in abeyance in §1.4. It is the case in which we have \( a \equiv_F b \ & \sim (a = \delta b) \) because \( \sim G(a) \ & \sim G(b) \). Our earlier example illustrates such a case:

\[(1.9) \quad \text{W.S. Porter is the same man as O.Henry but they are not the same number.}\]

It is worth briefly reconsidering this example because we can now see precisely why the relativist does not have a good case here. The absolutist uses the Fregean analysis to translate statements of the form '\( a \) is the same \( F \) as \( b \)' into his canonical notation. In the case of the first

2. Ibid., p. 6.
conjunct of (1.9) we get:

(10.2) \[ W.S.\text{Porter} = O.\text{Henry} & \text{man}(W.S.\text{Porter}) & \text{man}(O.\text{Henry}). \]

And the truth of the second conjunct of (1.9) is guaranteed by the Fregean analysis:

(10.3) \[ W.S.\text{Porter} = O.\text{Henry} & \neg\text{number}(W.S.\text{Porter}) & \neg\text{number}(O.\text{Henry}). \]

Unlike cases of (R) in which 'G(a)' and 'G(b)' are both true no contradiction results from this simple application of the Fregean analysis. The relativist and absolutist accounts seem equally plausible here and there is thus no point in pursuing this sort of case further. If this is the best the relativist can do to support his theory he has done nothing to justify our trouble in trying to construct a new theory of identity.

The third case can also be illustrated by an earlier example:

(1.10) \[ W.S.\text{Porter is the same man as O.\text{Henry but they are not the same boy.} \]

In such cases we have 'a \neq b & \neg(a = G b)' because either '\neg G(a) & G(b)' or 'G(a) & \neg G(b)'. Here again the Fregean analysis provides an account (though one prone to difficulties) for we have (10.2) for the first conjunct and

(10.4) \[ W.S.\text{Porter} = O.\text{Henry} & \text{boy}(W.S.\text{Porter}) & \neg\text{boy}(O.\text{Henry}) \]

which guarantees the truth of the second conjunct. But
Wiggins doesn't make this point. Instead he makes two claims the force of which is rather obscure. He claims, firstly, that the example shows 'the necessity for care about tenses, both in the interpretation ... of \(~(a =_G b)\) and in the interpretation of Leibniz' Law' if we take tenses into account 'it follows that \(\sim(a =_G b)\)', properly read, is not true.'\(^1\) This suggests that

\[(10.5) \quad a =_G b\]

(i.e., 'O.Henry is the same boy as W.S.Porter') is true\(^2\) because it is true that:

\[(10.6) \quad \text{O.Henry was the same boy as W.S.Porter.}\]

But from the fact that (10.6) is true\(^3\) it doesn't follow that (10.5) is true, for (10.5) formalizes the present tensed second conjunct of (1.10) whilst (10.6) is completely different. From the fact that a and b were the same boy it doesn't follow that they are the same boy after they have ceased to be boys. Of course, the conjunction of (10.6) with the first conjunct of (1.10) will not give us

---

1. Ibid., pp. 6-7.
2. Wiggins does not state that he is using a more than two-valued logic, but compare his second argument on (1.10).
3. In fact there is some doubt as to whether (10.6) is true since, in a certain sense, O.Henry never was a boy since W.S.Porter only adopted his pseudonym when adult. But let us grant this point.
a case of (R) but this is irrelevant since it is (1.10) which is up for discussion. It is precisely by taking tenses into account that one can tell the difference. Now it may be that \( C = \text{G}_n \) in (10.5) should be timelessly interpreted:

\[
(10.7) \quad (\exists t) [R_t (O. Henry is (tenselessly) the same boy as W.S. Porter)]
\]

And let us grant Wiggins that (10.7) is true. But why suppose that we had (10.7) in mind when we set up (1.10)? Why not interpret the second conjunct of (1.10) as straight-forwardly present tensed and straight-forwardly false? What Wiggins needs here is the point about the use of tenses in the interpretation of Leibniz' Law, for unless we use tensed Leibniz' Law (10.4) will be contrary to the indiscernibility of identicals. But I see no need for his other points.

Wiggins' second comment is equally obscure. He uses the example to draw a distinction between phase sortals (e.g., 'boy') and 'substance-concepts' \(^1\) (e.g., 'man'). Though we made such a distinction in §3.4 it is not quite clear what it amounts to. Nonetheless, in the case under discussion the difference between the two covering concepts seems clear enough. Whilst Wiggins initially claims that 'boy' is a sortal 'and ... make[s a] perfectly good covering concept. One can count and identify

---

such things, and so on, he later seems to renege on this claim by denying that 'boy' is a substance-concept because phase sortals do not give 'the privileged and (unless context makes it otherwise) the most fundamental kind of answer to the question "what is x?". The point he wants to make seems to be that since 'boy' is not a substance-concept it cannot act as a completing concept and thus identity statements in which it is the covering concept are incomplete; i.e., (on Wiggins' theory) lack clear sense. He writes: '[T]hat for all x and all y, every concept which adequately individuates x for any stretch of its existence yields the same answer, where it does yield any answer at all, as every other genuinely individuating concept for x and y to the question whether x coincides with y or not.' This suggests that on occasion 'boy' does not yield an answer at all and therefore cannot be a proper completing concept. Hence any identity statement which it covers lacks clear sense and hence cannot be said to be true or false. This salvages Wiggins' earlier point about (10.5) which would, under this interpretation, be neither true nor false, but wrecks his point about (10.6) which is neither true nor false either. As a result (1.10) lacks a truth-value and the relativist loses his case of (R).

1. Ibid., p. 6.
2. Ibid., p. 7.
3. Ibid.
But surely 'boy' does yield an answer in the case in point: for if a is not a boy then a is not the same boy as anything. And two further points: firstly, from the fact that 'S' does not give the most fundamental kind of answer to the question 'what is x?' it does not follow that there are no occasions on which 'S' does not supply an answer of any kind to the question 'is x the same S as y?' The connection between substance-concepts (as Wiggins defines them) and the role which Wiggins ascribes to them as covering concepts has not been made out despite the efforts we have devoted to the task in Chapters Four and Seven. Secondly, if Wiggins' distinction between the two types of covering concept is going to sustain his point, I think that it needs to be made a lot more sharply than he makes it. ¹ We need to know in some detail what is wrong with phase sortals.

Wiggins' response to these cases, however, seems to be needlessly complex, for the Fregean analysis together with tensed Leibniz' Law provides a consistent absolutist account, thus (where $t' < t$):

\[(10.8) \quad R_t(\text{man}(a)) \land R_t(\text{man}(b)) \land R_t(a = b) \land
\neg R_{t'}(\text{boy}(a)) \land \neg R_{t'}(\text{boy}(b)) \land R_{t'}(\text{boy}(a)) \land R_{t'}(\text{boy}(b)).\]

¹ Later he recognizes that there are cases in which it is hard to know whether we have a substance concept or a phase sortal. (Ibid., pp. 59-60; see also Tobias Chapman, 'Reference and Identity', Mind, vol. 82, 1973, p. 550 for further examples and Gerald Vision, 'Essentialism and the Senses of Proper Names'. American Philosophical Quarterly, vol. 7, 1970, pp. 321-330; for discussion.) Wiggins' reference to context in the passage quoted above indicates that he cannot make an absolute distinction.
In fact there is no need to place 'a = b' in (10.8) within the scope of a realization operator since both \( R_t(a = b) \) and \( R_{t'}(a = b) \).

I'm not sure that Wiggins adequately differentiates his fourth type of case. Wiggins characterizes them as cases where 'a =_F b & ¬(a =_G b) & (G(a) v G(b)) & (G(a) & ¬G(b))', but his type-(3) cases satisfy this requirement. I suspect that he intends type-(4) cases to be distinct from type-(3) cases in that they are not resolve by the absolutist by consideration of tenses and phase sortals. Wiggins gives a number of examples and an extended discussion of them, but the examples all (except for one which seems properly to belong to his fifth type) involve tenses as Wiggins himself notes. In fact, it is rather difficult to find examples of the fourth type which do not involve identity through change and therefore collapse into the third type. However, I think the following will serve. Let us define the term 'pair' in such a way that it is indifferent between 'ordered pair' and 'pair class' or 'unordered pair'. To be the same pair is to be a pair

1. Ibid., p. 7.
2. Ibid., pp. 8-9.
3. Ibid., pp. 10-16.
4. Wiggins' (8) on p. 8, Ibid.
5. Ibid., p. 16.
and to have the same members. 'Pair' (like 'set') is substantival when the members of the pair in question can be located under a sortal. From what has just be said it follows that the ordered pair \( (1,2) \) and the pair class \( \{2,1\} \) are both pairs, and moreover:

\[(10.7) \quad (1,2) \text{ is the same pair as } \{2,1\} \text{ but they are not the same ordered pair (though } (1,2) \text{ and } \{2,1\} \text{ are both pairs and } (1,2) \text{ — though not } \{2,1\} \text{ — is an ordered pair.)}\]

We can apply the Fregean analysis, which in this case gives us:

\[(10.8) \quad (1,2) = \{2,1\} \& \text{pair}((1,2)) \& \text{pair}((2,1)) \& \text{ordered pair}((1,2)) \& \sim\text{ordered pair}((2,1))\]

But, apart from the arbitrary rejection of ordered pair-distinctness in favour of pair-identity\(^1\), (10.8) runs into trouble with (LL) which it violates. No manipulation of tenses will reconcile a consistent Fregean analysis with (LL) unless we replace the first conjunct of (10.8) by '\((1,2) \neq \{2,1\}\)' which scarcely represents (10.7).

The treatment of examples of the fourth type which Wiggins offers admits, rather than resolves, the problems which (10.7) offers for the absolutist. Wiggins denies that fourth type examples are possible, but his reasons are obscure:

---

1. Why shouldn't we have '\((1,2) \neq \{2,1\}\)' as the first conjunct of (10.8)?
In fact it begins to appear why there simply cannot be cases of type-\((4)\). Where \((\exists g)(a =_g b)\) and allegedly \((\exists g)\sim(a =_g b)\) and \(g(a) \lor g(b)^1\) either \(g\) is a substantial sortal or it is not. If it is not substantial then it will always need to be proved that we have more than a type-(3) case or a case of the constitutive 'is'.^2 If it is a substantial sortal then either \(a\) or \(b\) has to be a \(g\) without the other being a \(g\). But this violates Leibniz' Law.\(^3\)

But the distinction here between substantial and non-substantial covering concepts is spurious, for the case will violate Wiggins' version of Leibniz' Law (1.13) whichever the covering concept is. Nor is the appeal to (1.13) any sort of defence at all. The absolutist can hardly claim that no such cases arise because, if they did, his theory would be violated. Rather, it is an admission that the absolutist has to give some alternative account.

---

1. This must be the exclusive 'or'.

2. Presumably Wiggins holds that compositional nouns are not substantial concepts, though he does not say so explicitly. Indeed, he implies that there is no 'hard and fast or canonically correct answer to the question "what is Cleopatra's Needle?"' (ibid., p. 15). So much is undeniable - unless we can find some reason for denying that compositional uses of nouns are substantival terms. After the last chapter it is hardly necessary to add that Wiggins' appeal to the constitutive 'is' is not very convincing.

3. Ibid., pp. 15-16.
In Wiggins' fifth type of case we have:

\[(10.9) \quad a =_F b \& a \neq_G b \& F(a) \& F(b) \& G(a) \& G(b)\]

As an example of the fifth type consider the list:

(I) \quad a \text{ Dog} \\
\quad b \text{ Dog}

We have:

\[(10.10) \quad a \text{ is the same type word as } b \text{ but they are not the same token word (though both are token words and both are type words).}\]

The Fregean analysis runs into trouble here:

\[(10.11) \quad a = b \& a \neq b \& \text{ token word}(a) \& \text{ token word}(b) \& \text{ type word}(a) \& \text{ type word}(b)\]

We gain the same sort of contradiction from using the Fregean analysis on an example similar to (10.7), for we have:

\[(10.12) \quad \langle 1,2 \rangle \text{ is the same pair as } \langle 2,1 \rangle \text{ but they are not the same ordered pair though both are pairs and both are ordered pairs.}\]

Of Wiggins' five ways, the first gives rise to no examples of (R) and hence poses no difficulty; the second is easily dealt with by the absolutist by means of the Fregean analysis; the absolutist can also deal with the third type fairly easily by combining the Fregean analysis with tensed Leibniz' Law. The fourth and fifth, however,
are more troublesome for the absolutist who is forced to find some alternative analysis of them. In general, attempts have fallen into two main classes. Firstly, there is the attempt to show that there is some equivocation in the use of singular terms in formulating the example of (R) and secondly an attempt to show that the relations involved in stating the particular examples of (R) are not identity relations.\textsuperscript{1} In Chapter Nine we have already examined, and found wanting, one major absolutist attempt along the second line to show that the relativist uses other than identity relations in formulating (R). I shall consider such moves further in \S 10.3, but in the next section I want to examine the absolutist's first type of argument: namely that the relativist trades on an equivocation in the use of singular terms in formulating cases of (R).

\textbf{\S 10.2 The Relativist's Alleged Referential Equivocation.}

It is easiest to approach this absolutist argument by considering how the absolutist would use it to dismantle the relativist's examples of (R). The absolutist urges, in the case of (10.10) for example, that if both conjuncts of (10.10) are identity statements then the first asserts identity between type words whilst the second asserts it between token words. Moreover, 'if "a" is the name of a

\textsuperscript{1} See, for example, Perry, Identity, pp. 52-53, for an explicit statement of this two-pronged attack on (R).
word-token, then "a" cannot be the name of a word-type. ¹ If we accept this then our example of (R) perforce collapses. Let us introduce the name 'c' as the name of the word-type of which 'a' and 'b' are both the names of word-tokens. Then instead of (10.10) we have:

(10.13)  c is the same word-type as c & a is not the same word-token as b.

The case of (R) entirely disappears. Consider Geach's man-surman example: 'if "Tom Jones" names a man, then it cannot name a surman'. ² Again the example of (R) collapses since in such a case Tom Jones is not the same surman as anything for he is not a surman. A similar response deals with (10.12): if '(1,2)' is the name of an ordered pair it is not the name of a pair, or, if it is the name of a pair, then it is not the name of an ordered pair. Every example of (R), the absolutist hopes, will collapse in this way.

Perry tries to boost the plausibility of this account of cases of (R) by including amongst them the following example. A magician is sawing in half his assistant (who is obscured within a box from which his head and arms protrude). To convince the audience that

¹ Stevenson, 'Relative Identity and Leibniz's Law', p. 157; see also Perry, Identity, p. 54; 'The Same F', p. 188.
² Stevenson, ibid.
only one man is in the box the magician waves the assistant's hands at the audience saying 'You see, this is the same man as that' (the assistant grimaces the while). But the magician could also have said 'This is a different hand to that'. Of course the references made by 'this' and 'that' in the first conjunct are different from those made by the same words in the second. Perry treats this as a model of what (less obviously) happens in other cases of (R).

What the absolutist has now to do in order to show that this model works for (10.13) is to show us that his claim that if 'a' names a word-token it does not name a word-type is true. According to Stevenson 'a' cannot be the name of a word-type as well as the name of a word-token 'since the noun "word-token" supplies a different criterion of identity from the noun "word-type".' This, of course, guarantees that his point will work against any case of (R) whatsoever since there can be no case of (R) unless the two covering concepts provide different criteria of identity. But it also guarantees that his argument is circular since he simply appeals to a principle which he can only demonstrate if (R) is rejected: namely, that an item may not fall under two terms conveying

1. Perry, Identity, pp. 50, 52.
conflicting criteria of identity. But can't the absolutist reply that since identity criteria tell us what constitutes identity, if an allegedly single item turns out to have two distinct sets of identity criteria then surely that is as good a proof as we'll ever have that it is not a single item after all but two distinct items? What can we hope to use identity criteria to show if not to show that?

Arguments of this type are employed by almost everyone against (R). Wiggins\(^1\) and Stevenson\(^2\) both make appeal to Geach's theory of proper names, according to which 'for every proper name there is a corresponding use of a common noun preceded by "the same" to express what requirements as to identity the proper name conveys.'\(^3\) If this is so, how, the absolutist asks, can it be proper to use the same name when two conflicting sets of identity criteria are intended? Wiggins uses the point to dispose of Linsky's\(^4\) Cleopatra's Needle example. If Cleopatra's Needle corrodes away and is replaced by a similarly shaped obelisk, we have:

---

3. *Reference and Generality*, p. 43. (The theory was discussed above in §7.4.) If the absolutist argument is to apply generally other singular terms should be included in the account. This is a simple matter and I shall take this extension as understood in what follows.
(10.14) Cleopatra's Needle at \( t_0 \) is the same landmark as Cleopatra's Needle at \( t_1 \) but they are not the same block of stone.

(where Cleopatra's Needle corrodes away at \( t \) and \( t_0 < t < t_1 \)). Wiggins writes:

It seems to follow [from Geach's theory of proper names] that if 'Cleopatra's Needle' had two equally good but different 'nominal essences'\(^1\) then it ought to be ambiguous. in which case [(10.14)] should not surprise or impress us any more than any startling paradox arrived at by equivocation.\(^2\)

His conclusion is:

The example may owe a specious plausibility precisely to the fact that 'Cleopatra's Needle' can sustain itself indefinitely long ambiguously poised between these [viz. the sense given by 'block of stone' and that given by 'landmark'] and perhaps yet other incompatible senses.\(^3\)

Nelson generalizes this conclusion to make it fit all cases of (R):

Identity is, then, not relative. It is not relative because if it were there would have to be individuals which are in themselves of

---

1. In fact Geach (Reference and Generality, pp. 43-44) says that the general term which conveys the identity criteria associated with a proper name also conveys the nominal essence of the thing which the name names — not, as Wiggins says, of the proper name itself.


3. Ibid., p. 15.
no particular kind, but hover ambiguously between many kinds. There neither are, nor could there be, such individuals.¹

Wiggins doesn't generalize his argument, although he does use it elsewhere.²

Let us deal first with the ad hominem argument about Geach's theory of proper names, for it is not clear that Geach has involved himself in contradiction. On the Geachian theory proper names have sense and the sense is given by a general term with which the proper name is associated. Now quite obviously most proper names will be associated with several different terms of different sense (the name 'Jemima' will be associated with 'pet' as well as 'cat' and 'pet' and 'cat' have clearly different senses). Geach does go on to claim that 'the sense of the proper name "Jemima" need not include the sense of any predicables like "female" and "tabby" that apply to Jemima but not to all cats.'³ But this still leaves in both 'cat' and 'animal' which have different senses. If it were the case that Geach was claiming that the sense of a proper name is completely given by a general term with which the name is associated (subject to the proviso just

1. 'Relative Identity', p. 257.
2. Cf., for example, Identity and Spatio-Temporal Continuity, pp. 16-18.
quoted) then it would follow that just about every proper name was ambiguous in sense. Instead Geach is claiming that part of the sense of the proper name is given by the identity criteria which the general terms it is associated with convey. Now despite the multiplicity of general terms there might turn out to be only one set of identity criteria since all the general terms convey equivalent identity criteria (i.e., are such as to satisfy the Dummett analysis). This, however, does not so far touch the point at issue for we are concerned with cases in which there are conflicting identity criteria so that the name will remain ambiguous after all this has been taken into account.

However we can interpret Geach's theory of proper names in a way suggested by Tobias Chapman:

Most objects of reference are such that no guarantee can be given that the general concepts by means of which they can be referred to each 'contain' a principle of identity which will individuate in exactly the same way (either at one time or over time) and further, we cannot restrict the sense of the proper name to just those concepts which do individuate in the same way.... Geach says, for instance, 'different proper names of different material objects convey different requirements as to identity' ([Reference and Generality] p. 43). To this he might have added that the same proper name may convey different requirements as to identity because the thing named falls under different concepts, and that this is precisely what makes (R) true."

1. 'Identity and Reference', p. 546.
Of course, Wiggins can still claim that 'Cleopatra's Needle' is ambiguous for precisely that reason: it conveys different sets of identity criteria. Against this Chapman raises two objections. 1 Firstly, it imposes a certain sort of conceptual conservatism for we could never discover that the bearer of a non-ambiguous proper name (in the sense the absolutist requires) fell under some substantival term which conveys identity criteria which conflicted with those conveyed by the substantival terms under which we already knew that it fell. This, indeed, is a form of conceptual conservatism against which Wiggins himself objects. 2 Secondly, Chapman claims that such an argument leads to 'a specious form of Platonism'. 3 I'm not quite sure what this objection amounts to, but it seems to be the claim that Wiggins would require that we had not merely the material Cleopatra's Needle in London (i.e., Cleopatra's Needle qua block of stone) but various other Cleopatra's Needles, abstracted from their physical instantiation, in Plato's heaven (e.g., Cleopatra's Needle qua landmark). This objection, if I have understood it aright, is rather like the slick objections to Meinong's theory of objects and I'm not too happy to place much weight on it.

1. Ibid.
2. *Identity and Spatio-Temporal Continuity*, pp. 59-60; fn. 37 (p. 69).
3. 'Identity and Reference', p. 546.
There is a convincing absolutist reply to Chapman's charge of Platonism, however, although it turns out to be rather a double edged weapon. The absolutist can reply that the fact that 'Cleopatra's Needle' is ambiguous in sense it does not follow that there are two or more Cleopatra's Needles - either on earth or in heaven. But this shows, also, that even if the absolutist is right in claiming that, on a Geachian view of proper names, proper names are ambiguous in sense he is still unable to dismantle the examples of (R). If Wiggins is going to dismantle (10.14), for example, as a case of (R) he needs to claim more than that 'Cleopatra's Needle' is ambiguous in sense - he needs to make the further claim that it is also ambiguous in reference. Nothing would have been done to avoid a case of (R) if the proper names used in both conjuncts, though used in a different sense in each, nonetheless referred to the same object in both. This is brought out clearly in Stevenson's original statement of the case (that if 'a' is the name of a type-word it is not the name of a token word) rather than in Wiggins' exposition. In this case, therefore, the appeal to Geach's theory of proper names is irrelevant unless it can be shown that the sense-ambiguity of proper names leads

1. If identity criteria form part of the sense of a substantival term which in turn provides part of the sense of a proper name, then some ambiguity in the sense of the proper name seems to be inevitable.
to a referential ambiguity (and this has not been argued).

If we are to see whether there is a referential ambiguity in the use of 'Cleopatra's Needle' we need to look at what exactly it is the name of. Let us introduce some neutral names for the items we want to refer to.

According to Wiggins we use 'Cleopatra's Needle' ambiguously between 'Cleopatra's Needle qua landmark' and 'Cleopatra's Needle qua block of stone', and (he must further claim) the reference of each term is different. Let 'a_F' be read 'Cleopatra's Needle qua landmark' and let 'a_G' be 'Cleopatra's Needle qua block of stone'. We also need to take time into account in our nomenclature, so let 'a_F' be read 'Cleopatra's Needle qua landmark at t_0' and let 'b_F' be read 'Cleopatra's Needle qua landmark at t_1', and similarly for 'a_G' and 'b_G'. We can now rewrite (10.14) somewhat more neutrally:

\[(10.15) \quad a_F =_F b_F \land a_G \neq_G b_G\]

The question now is: what is the relationship between a_F and a_G and between b_F and b_G? The absolutist claims that it is not identity in either case. And clearly it is not absolute identity, for the indiscernibility of identicals is violated. The relativist, on the other hand, claims that it is identity in both cases, but plainly he is not

1. The notation is familiar from our account of what it is for a singular term to refer under a sortal. Cf. §3.4 above.
claiming that it is absolute identity as he does not recognize the concept. He claims that they are identical relative to the substantival term 'G'. And this is surely the case for Cleopatra's Needle qua landmark at \( t_0 \) is the same block of stone as Cleopatra's Needle qua block of stone at \( t_0 \), and Cleopatra's Needle qua landmark at \( t_1 \) is the same block of stone as Cleopatra's Needle qua block of stone at \( t_1 \). To deny this might well lead one into a specious form of Platonism with entities multiplied praeter necessitatem, for Cleopatra's Needle clearly exists at \( t_0 \) (and at \( t_1 \)) both qua landmark and qua block of stone. It would be bizarre not to prune one's ontology by a few simple relative identities.

I think this argument exposes the confusion upon which the absolutist objection to (R) is based. The absolutist generates his objection by foisting upon the relativist the same unholy alliance of relative and absolute identity theories which bedeviled Locke.\(^1\)

He presents the relativist as claiming that a single item has conflicting identity criteria, without recognizing that the relativist can make no sense of the phrase 'a single item',\(^2\) since it makes no sense to talk of items

---

1. See above \( \text{§1.4.} \).

2. It has been pointed out to me by Richard Routley that it may be possible to construct a relative identity theory based on (R) but excluding the function thesis in which 'a single item' did make sense. The details of such a theory are far from clear to me and it would, presumably, have to be able to cope with identities without criteria.
being the same or different absolutely. Perry, for example, claims that in order to give a case of (R) "x" and "y" will have to refer to the same objects in the first and second conjuncts.¹ Perry goes so far as to note that 'Geach might object ... that the statement of this requirement violates [Geach's] thesis, because "same object" conveys no criteria of identity.'² But he excuses this on the ground that he does 'not think in this sort of dispute we necessarily beg any questions by saying something our adversary regards as unintelligible. If we did, the more one regarded as unintelligible, the more impenetrable his [sic] position would be.'³ However, he fails to notice that he is putting this claim into the mouth of the relativist, since he builds it in as an adequacy condition on (R). Even if he didn't foist onto the relativist claims the relativist finds unintelligible, he could scarcely hope to convince the relativist by an appeal to principles so centrally in dispute.⁴

1. 'The Same F', p. 188 (my italics); see also Identity, pp. 51-52.
2. Identity, p. 52n.
3. Ibid. His second defence, that Geach himself violates his own ban is not very convincing. (Cf. Identity, p. 53.)
4. See Calvert, Relative Identity, p. 81 for a defence of relative identity against Perry on this point.
Nelson's claim that the relativist requires items to hover ambiguously between sorts takes the obvious truth that items may fall under many different substantival terms too far, but doesn't take far enough the idea of a sorted domain. It is not the case that Cleopatra's Needle must be either a landmark or a lump of stone, or that, in (I), a must be either a type-word or a token-word. It is not incoherent to claim that Cleopatra's Needle is both a landmark and a lump of stone and many other things besides. As Geach says: "It is ... the question "But which is it really?" that is incoherent." This has long been recognized in philosophical psychology on the issue of levels of description of action: in hailing a taxi one raises one's arm. It is ridiculous to ask 'Which did you really do?' But the idea that we must individuate our items in only one way at a time dies hard in philosophical logic.

It is only if we try to combine the absolute with the relative theory (by imposing relative identities among the members of an unsorted domain) that we end up with Nelson's unsorted individuals. The concept makes no sense for the relativist, who merely requires the innocuous notion that items falling under different substantival terms may be related by relative identity relations: that some f may

1. 'Ontological Relativity and Relative Identity', p. 10. It is for this reason that Wiggins' talk about the 'privileged' and 'most fundamental' answer to the question 'what is x?' (Identity and Spatio-Temporal Continuity, p. 7) is so perplexing.
be the same $F$ (or the same $G$) as some $G$. Since it is such relative identity relations which hold between $a_F$ and $a_G$ in (10.15), and since the relativist recognizes only relative identity relations, he has as good a title for using the same singular term for $a_F$ and $a_G$ as he could ever have. Thus he may write:

$$(10.16) \quad a =_F b \land a \neq_G b$$

for (10.16).  

Whilst the claim that a landmark is not identical with the stone of which it is composed is only marginally counter-intuitive (largely, I suspect, because of the way in which the prevailing absolute theory has coloured our intuitions - appeals to the Life Histories Principle, and the like, are likely to prove effective) there are other examples of (R) where the absolutist treatment leads to definitely counter-intuitive results. Consider:

$$(10.17) \quad 1/2 \text{ is the same rational number as } 2/4$$

but they are not the same fraction.

The absolutist has to claim that if '1/2' is the name of a fraction then it is not the name of a rational number. But this scarcely fits our intuitions for surely every fraction is a rational number. The same is true of (10.7)

1. Cf. Calvert, Relative Identity, p. 82, for a similar argument. Among absolutists Calvert is, I think, the one who gets closest to the truth on the referential equivocation issue. He is certainly the one who is fairest to the relativist.
it is simply false for the absolutist to claim that if 
'\langle 1, 2 \rangle' is the name of an ordered pair it cannot be the 
name of a pair, for an ordered pair is just a pair with 
structure. It is precisely the presence or absence of 
structure which gives pairs and ordered pairs different 
identity criteria. To claim that they must be distinct 
for that reason is mere absolutist dogma.

Equally the absolutist is in a difficult situation 
with the man-surman example. Because Geach himself intro­
duced the term 'surman' he is entitled to define it as he 
wishes. Since he decided to define 'ξ is the same surman 
as η' as 'ξ and η are both men and have the same surname' 
it is scarcely open to the absolutist to claim that if 
'Tom Jones' and 'Jack Jones' are both the names of men 
then they cannot be the names of a surman. It seems that 
Stevenson is here relying on Perry's assumption that 
surmen are sets (or families) of men. The same assumption 
seems to underlie his treatment of the type-token case. 
If type-words are really sets of token-words then it would 
be wrong to claim that the token-word a is (even relatively) 
identical to a set of which it is a member. But the 
relativist is not forced to agree with this account of 
what type-words are. He could analyse 'ξ is the same 
type-word as η' as 'ξ and η are token words and ξ is 
equiform with η'. He then gets an example exactly analogous 
to the surman-man example. Moreover, this analysis of 
'ξ is the same type-word as η' has distinct advantages 
over the alternative. It meshes much better with the 
way we talk about type-words. If type-words are really
classes of token words we could, for example, never say 'Dog' is a type-word' for in each case it would be the token word we were referring to. Instead we would have to say something like '{x : x is equiform with "dog"} is a type word', which is manifestly not what we do say. But it is not my business here to defend particular theories about type-words and nor do I have to, for we can give the absolutist his account of what a type-word is¹ and introduce the notion of (say) 'an equitoken word' such that ξ is the same equitoken word as η is given the relativist analysis suggested above. There seems to be nothing wrong with such a concept, I can think of no way in which it might be thought incoherent, yet it gives cases of (R), for a may be the same equitoken word as b though they are distinct token words, against which the absolutist argument is, by definition, unavailing.

It may be objected that the relativist has, in these examples, simply defined his position into existence by defining special substantival terms ('pair', 'surman', 'equitoken word') from which examples of (R) can be constructed. I don't think that this is a very powerful objection, for there seems no reason to take conceptual conservatism to such an extreme as to prohibit the introduction of new substantival terms into a language - and every reason not to. Moreover, in some cases it seems

¹. In doing so I can't help but remark that it is a poor theory of identity which requires buttressing so frequently by these special conceptual manoeuvres.
desirable to define new terms to capture senses which seem to be present in terms already in the language (as when we defined 'official*' to capture explicitly one sense of 'official'). If we forbid even this then it seems likely that discussion of (R) will get lost in irrelevant considerations of whether the covering concepts have retained their original sense. A new example, but one which has been noted in the literature¹, will serve to illustrate this. Suppose that a major national route, the A23 let us suppose, passes through a certain town along Elm Road. Now the question arises: Is Elm Road the same as the A23? The question is not answerable one way or the other without a covering concept, but even if we provide 'road' as a covering concept the outcome isn't clear because 'road' may operate with two relevant senses. In the first sense, call it 'road¹', to be the same road is to be the same route between places; and in the second sense, 'road²', to be the same road is to be the same physical strip of concrete and paving stones. (To make the case fool-proof we would have to spell out both senses more fully, but the present indication will do for our purposes.) Now, given this distinction, Elm Road is the same road² as the A23 but they are not the same road¹. It is scarcely possible to maintain that Elm Road and the A23 are not both road¹s and road²s. I do not see

how the absolutist can resolve this issue but he could indefinitely postpone the relativist's resolution by disputing at every turn the relativist's account of the meaning of 'road' in natural language or (even) by denying that the natural language concept of a road is incoherent. The only way the relativist can be sure of cutting short this prevarication is to introduce new terms the identity criteria for which are well-defined.

Additionally, we may point to cases in which the natural language terms seem fairly clear-cut as far as identity criteria are concerned. Consider a discussion about whether two people who speak different dialects speak the same language. It seems natural to say that they speak the same language but different dialects. But this does not suppose that what they speak must be either a language or a dialect; nor does it imply (as Nelson seems to think) that they speak something which is neither a language nor a dialect. In truth, they speak both - but this does not mean they are bilingual. Nor can we claim that a language is a set of dialects, for then to speak a language would require speaking many dialects. The facts are simple and natural language makes them plain: that which they speak is both a language and a dialect and, since the identity criteria associated with each term are different, we have, between the two of them, one language spoken but two dialects.

1. Witness Wiggins' remarks on the natural language concept of a person, Identity and Spatio-Temporal Continuity, pp. 43-44.
The relativist's case, so far, is as follows: Firstly, the absolutist's argument from referential equivocation is circular and therefore ineffective. It presupposes that the relativist is committed to absolutist principles which he explicitly rejects. Secondly, we have argued that in certain cases (particularly in the rational number/fraction and language/dialect examples) the absolutist is committed to denying principles which we intuitively accept: viz., that fractions are rational numbers and that dialects are languages. Thirdly, we have argued that in the case of certain defined terms (e.g., 'surman', 'equitoken', 'pair') the absolutist if he is to carry his argument forward is committed to denying principles which are by definition true. Fourthly, Chapman has argued that if the absolutist takes his claim about the ambiguity of proper names seriously he will fall into a species of conceptual conservatism which it is desirable to avoid.

There are two further points I want to raise: Fifthly, so long as the absolutist cannot prove relative identity theory incoherent we may urge that all the examples of (R) considered are true conjunctions of sentences of English (or of coherent extensions of English). Thus, even if we grant the efficacy of the absolutist treatment as a coherent alternative to the relativist account, we can still claim that the relativist account fits better with ordinary
English. In fact, it seems fairly clear that the conceptual system underlying natural language is not so neat and tidy as the absolutist's account suggests. It has been a constant assumption running through the absolutist account that the concepts we employ are to an astonishing extent well-ordered. It was claimed that no individual falls under more than one ultimate sortal, that any two intersecting sortals both restrict some third sortal, and now that no item falls under two substantival terms which convey conflicting criteria of identity. (Various absolutist positions might be proposed which did without one or more of these simplifying assumptions but none of those so far proposed have managed to do without any of them.)

The third simplifying assumption, we now see, leads to results which conflict with our intuitions about the way in which terms are used in natural language. What the absolutist is trying to do is not so much describe the actual conceptual system we use as to reconstruct it so that it fits his preconceptions.

The sixth argument I want to consider is whether the absolutist's alternative is really adequate at all. I think I have shown that on occasions it conflicts with some of our intuitions, but the absolutist may simply claim that these intuitions need reorganizing just as much as the original examples of (R). However, if his account is to be adequate he has to show us, since he rejects (for example) that Cleopatra's Needle qua landmark at t, is identical with Cleopatra's Needle qua lump of
stone at \( t_0 \), just what the relation between Cleopatra's Needle \textit{qua} landmark and Cleopatra's Needle \textit{qua} lump of stone is. It is not surprising that Wiggins claims that it can be represented by the 'is' of composition,\(^1\) but whether this is an identity statement or not hangs, as we saw in Chapter Nine, on whether one accepts or rejects (R). With other examples, the absolutist is forced to other expedients. On the absolutist account of 'type-word' and his (mistaken) account of 'surman', the word-token 'dog' is a member of the appropriate type-word and Tom Jones is a member of the appropriate surman. However, what the relation might be, on an absolutist account, between a token-word and an equitoken word or between a man and a surman (on Geach's actual interpretation) is surprisingly obscure. Yet the absolutist must provide such a relation if his theory is to be adequate and, moreover, he must demonstrate that it is not a relative identity relation if his argument is to be conclusive. So far, he has not even satisfied the first requirement in the 'equitoken' and 'surman' cases; and has not yet satisfied the second in the case of Cleopatra's Needle.

\(^1\) Identity and Spatio-Temporal Continuity, pp. 14-15.
§10.3 Are Relative Identity Statements Really Identity Statements? The second common absolutist ploy against examples of (R) is to deny that identity or distinctness is expressed in both conjuncts. It is denied, for example, that

\begin{equation}
\xi \text{ is the same surman as } \eta
\end{equation}

expresses identity. This argument is usually run in conjunction with the referential equivocation argument just considered. For if we fill in the place-holders of (10.18) with the names of surmen it is hard to deny that the result is an identity statement, yet if we are to get an example of (R) we need to fill in the place-holders with the same names as we used to fill the place-holders of '\(\xi \text{ is the same man as } \eta\)' . The total argument is thus a dilemma: in any case of (R) either the singular terms refer to the same items in each conjunct or they do not. If they do not then there is a referential equivocation and no case of (R); if they do then either the first conjunct is not an identity statement or the second is not a distinctness statement.\(^1\)

---

1. The second horn of this dilemma, like the first, is often stated in a way that begs the question against the relativist by using absolute identity. See Perry, 'The Same F', p. 188; Identity, p. 53, for a statement of the argument and Calvert, Relative Identity, p. 81, for this objection to it. (Perry, for example, says that statements of relative identity are not identity statements ['The Same F', pp. 188-189]. Clearly, under these conditions his argument cannot fail - but neither can it convince the relativist.)
The case is, perhaps, most easily demonstrated with 'ξ is the same colour as η'. The absolutist denies that

(10.19) Bill's car is the same colour as Tom's

is an identity statement. But he would probably accept that

(10.20) The colour of Bill's car is the same colour as the colour of Tom's.

is an identity statement. Yet we can only get a case of (R) if we use the same singular term (without referential ambiguity) in both conjuncts, namely:

(10.21) Bill's car is the same colour as Tom's but Bill's car is not the same car as Tom's.

Clearly 'Bill's car' and 'Tom's car' are used without referential ambiguity in (10.21), but the absolutist denies that we have a genuine case of (R) because the first conjunct of (10.21) is not an identity statement.

We can thus see how the two absolutist arguments complement each other. If 'a is the same F as b' is a (true) identity statement then 'a' and 'b' are both the names of an F. If 'a is not the same G as b' is the (true) denial of an identity statement then either (i) neither 'a' nor 'b' is the name of a G; or (ii) both 'a' and 'b' are the

1. Perry, Identity, pp. 51, 53.
names of Gs; or (iii) one of 'a' and 'b' is the name of a G but not the other. If (i) holds then the absolutist can apply the Fregean analysis, for we have one of Wiggins' type-(2) examples. If either (ii) or (iii) holds then either 'a' or 'b' or both are used with referential ambiguity, since what is the name of an F cannot be the name of a G since 'F' and 'G' convey conflicting requirements as to identity.

I have already challenged the last part of this argument, but now I want to challenge the first part: the claim that if 'a is the same F as b' is a true identity statement 'a' and 'b' must both be names of an F. Now, it is obviously true that both a and b must fall under 'F', but that is not to say that they are both Fs. If (10.19) is true then it follows that both Bill's car and Tom's car fall under 'colour' but not, of course, that they are both colours. The absolutist is plainly making a stronger claim here. If statements like (10.19) are identity statements they are not absolute identity statements, for sharing a common property does not, in general, imply indiscernibility. But, of course, the relativist is not claiming that they are absolute identity statements. There seems to be far less wrong with the claim that they are relative identity statements: they satisfy reflexivity, symmetry, transitivity and (RLL). To argue that they are not identity statements because they are not absolute identity statements just begs the whole question against the relativist. If the absolutist claims that the relativist is blurring a distinction between common property statements:
and identity statements it is open to the relativist to demand some precise account of this distinction, for it is up to the absolutist to show that the distinction is not an arbitrary and unjustified one.

Let us consider a few attempts to distinguish between identity relations and common-property relations. Only absolute identity relations, it will be claimed, satisfy (LL) which is the defining law for identity statements. Even this claim must be taken with qualification in view of the modal paradoxes. Moreover, (LL) isn't of the correct form to enable us to decide whether 'a =_F b' is an identity statement or not, since 'a =_F b' is not the antecedent of (LL). We have to change (LL) into Wiggins' (1.13). But when this is done the question is begged against the relativist because (1.13) is incompatible with (R).

A second, related, attempt is the following: the absolutist may claim that only if 'a =_F b' is an identity statement can we licence inferences from 'ϕ(a)' to 'ϕ(b)'. But this does not give him the distinction he wants. (10.19) licences the inference from 'Bill's car is red' to 'Tom's car is red'. The difference seems to be one of degree only. Even (LL), because of the modal paradoxes, does not licence such inferences for all 'ϕ(ξ)'. I will

---

1. I don't know of any absolutist work to make this distinction plain. It is usually assumed to be intuitively obvious. The suggestions considered in what follows are therefore my own.
not attribute to the absolutist the absurdity of claiming that if 'a \neq_F b' licences n such inferences it is an identity statement, but if it only licences n-1 of them it is merely a common-property statement.

A third attempt at the distinction might be to try and find some difference between the covering concepts of identity statements and those of common-property statements. For example, it might be urged that compositional uses of nouns can cover only common-property statements. This does nothing to help with (10.19) but perhaps there is some other similar distinction which we can use to show that (10.19) is only a common-property statement. But which? We can't limit covering concepts for identity statements to sortals (for 'colour' is a sortal), nor to substantival terms (for 'colour' is substantival), nor to ultimate sortals (for 'colour' is ultimate). We need to make some further distinction between completing terms, but what such a distinction might be I have no idea, and no absolutist seems to have suggested one. There is, however, a related possibility of making the distinction the absolutist wants. He might claim that 'a \neq_F b' is an identity statement iff 'a' and 'b' are the names of Fs (names of the same F is 'a \neq_F b' is true, names of different Fs if it is false). Now this argument can disarm all examples of (R) only if the absolutist can maintain his referential equivocation argument - which we have just argued he cannot. However,
the relativist is so far under no obligation to accept the absolutist's legislation about when \( a \equiv_F b \) is an identity statement, since it always satisfies the formal requirements of relative identity theory. This has already been argued in the case of the constitutive 'is' in Chapter Nine and we could present similar arguments for other cases.

There is, however, an argument which the absolutist might use to get rid of cases of (R). The approach is to take an alleged example of (R) and to provide a paraphrase of one or other conjunct such that the paraphrase is neither an identity nor a distinctness statement, and then to claim, on the strength of that, that the original conjunct was not an identity statement either. I shall call this Wiggins' paraphrase procedure. Although only Wiggins makes this last claim explicitly (hence my attribution of the procedure to him - apart from the claims of historical priority) it is clear that Perry, also, needs to make the claim if his strategy is to be successful. A couple of examples will serve to make clear how the technique is applied. Wiggins\(^1\) deals with:

\[
(10.22) \quad \text{a is the same official* as b but they are not the same man.}
\]

We can paraphrase:

\(^1\) Identity and Spatio-Temporal Continuity, p. 18.
(10.23)  a is the same official* as b

as

(10.24)  a holds the same office as b.

Wiggins concludes that (10.24) 'predicates something of a and b in common, holding a certain office.' But to claim that as a result (10.23) or even (10.24) is not an identity statement begs the question against the relativist again.

Perry\(^2\) deals with:

(10.25)  a is the same surman as b but they are not the same man.

He makes the familiar misinterpretation of 'ξ is the same surman as η' since he claims that:

(10.26)  a is the same surman as b

is paraphraseable as

(10.27)  a is a member of the same surname class as b.\(^3\)

1. Ibid.

2. Identity, p. 55.

3. The terminology of 'surname classes' is my own. Perry uses 'family' whilst pointing out that the sense in which it is used is different from the usual. a and b are members of the same surname class iff a has the same surname as b. We could, of course, have used 'a has the same surname as b' as our paraphrase but that would not have brought out the point about classes which Perry wanted to make. Cf. Identity, p. 55.
(10.27) is not an identity statement and thus (though Perry doesn't explicitly make this claim) neither is (10.26). But here again there is nothing to stop a relativist simply claiming that (10.27) is an identity statement for it satisfies all the formal principles he requires an identity statement to satisfy.

However, for the sake of argument, let us grant Wiggins and Perry their claim that the result of applying the paraphrase procedure is not an identity statement. We can see straight-away that their argument that the originals are therefore not identity statements is not valid unless we have some additional principle to licence it. Wiggins is not explicit about the principle he uses and as Perry is not even explicit about the need to make the inference we get no help from him. I want now to consider various principles which might be thought to validate the inference and to show why they fail.

It is clear that not every property of a statement can be transferred across paraphrases in the way that Wiggins and Perry need the property of not being an identity statement to. For example, many statements in the active

---

1. In fact Geach is prepared to claim that 'any equivalence relation ... can be used to specify a criterion of relative identity.' ('A Reply', p. 558). But this is contentious since we would expect other conditions (e.g., that it had the form \( \xi = \eta \)) to be satisfied as well. It looks as if Geach might be applying the paraphrase procedure in reverse.
voice can be paraphrased in the passive, which does not imply that the original was not really in the active voice at all. Clearly we want a much more restrictive principle of transference which applies to identity statements and not, I suspect, to very much else. This alone should make us suspicious for why should identity statements be singled out for special treatment? When we consider some of the principles which would do the job Wiggins wants I think we shall find our suspicions justified.

The broadest plausible candidate appears to be the following:

\[(P1) \text{ For any statement, } S, \text{ if } S \text{ is equivalent to a statement } S^* \text{ such that } S^* \text{ is not an identity statement, then } S \text{ is not an identity statement.}\]

But \((P1)\) is too strong.

\[(10.28) \text{ a's office is the same office as b's office.}\]

and

\[(10.29) \text{ a's surname is the same surname as b's surname.}\]

are both identity statements even for the absolutist. To deny that they are identity statements is tantamount to denying that we can have identity statements between offices and surnames - for if \((10.28)\) and \((10.29)\) are not such statements what could be? Yet \((10.28)\) is paraphraseable
as (10.24) and (10.29) as (10.27). Thus if (Pl) is correct either (10.28) and (10.29) are not identity statements or (10.24) and (10.27) are: neither result seems to be acceptable to Wiggins and Perry and so it looks as if (Pl) fails.

The difficulties with (Pl) are even more radical. Although Wiggins only explicitly commits himself to accepting the indiscernibility of identicals, as expressed in (1.13),\(^1\) he must also be committed to the reflexivity of \(\xi = \eta\), and given these two we can deduce the identity of indiscernibles. But if he has both the identity of indiscernibles and the indiscernibility of identicals then it will follow that for each statement of the form 'a = b' there is an equivalent statement of the form:

\[
(10.30) \quad (\forall \phi)(\phi(a) \equiv \phi(b))
\]

But (10.30) is not an identity statement and, therefore, by (Pl), no statement of the form 'a = b' is an identity statement. I cannot think that Wiggins believes there are no identity statements.

Thus we need some weaker principle than (Pl) such that (10.28) and (10.29) are identity statements whilst (10.24) and (10.27) and (10.23) and (10.26) are not. If we compare (10.24) and (10.27) on the one hand, with (10.28) on the other, we see that whilst the relation in (10.24) holds between the same terms as the relation in

---

(10.27) the relation in (10.28) holds between different terms. Similarly, with (10.26) and (10.27) in contrast to (10.29). This suggests the following alternative to (P1):

(P2) For any relational statement, $S$, if $S$ is equivalent to a relational statement $S^*$ such that the relation in $S^*$ holds between the same terms as the relation in $S$, then is $S^*$ is not an identity statement $S$ is not an identity statement.

This licences the inference Wiggins and Perry want from the fact that neither (10.24) nor (10.27) are identity statements to the conclusion that neither are (10.23) nor (10.26) - without jeopardizing the status of (10.28) and (10.29). But (P2) is subject to our second objection to (P1). Given Leibniz’ Law any identity statement 'a =f b' will be paraphraseable as:

(10.31) a shares all its predicates with b

which is not an identity statement. Again, with (P2) there can be no identity statements.

Moreover, I can see no way in which we can formulate a principle which licences all the inferences Wiggins and Perry want to licence and still preserve the sort of paraphrase of identity statements which the relativized identity of indiscernibles principle provides. It looks as though the entire theory of absolute identity will collapse in the face of Wiggins' efforts to preserve it against some examples of (R). We could, of course, exclude Leibniz' Law type paraphrases by stipulation but
that is scarcely a decent policy though it is hardly more
ad hoc than the other principles we've considered. Moreover, even if the Leibniz' Law paraphrases were excluded any successful paraphrase procedure would undermine the whole notion of identity criteria which Wiggins and Perry share with the relativist, for it would be possible to paraphrase any identity statement away in favour of criteria for the statement. There seems little independent reason to think that any adequate principle of the kind we've been considering is true. Thus, even if we grant Wiggins' and Perry's initial claims that (10.24) and (10.27) are not identity statements we still have no good reason to think that being an identity statement should always be the victim of conceptual imperialism.

But let us grant that the absolutist can make good the distinction between identity statements and common-property statements, and, moreover, can substantiate Wiggins' paraphrase procedure to complete the absolutist analysis of cases of (R). In other words, let's grant the absolutist everything that he's been arguing for in this section. Does he, even then, have a valid objection to (R)? Surely not, for all he has shown is that the relative identity theory can handle common-property statements as well as identity statements. Moreover, he has pointed up an inadequacy of his own theory which can only treat identity statements. He then has to propose an alternative theory (or, more likely, alternative theories) to account for common-property statements (including, for example, some form of (RLL)). And this only shows that the
relative identity theory does all the work of the absolute theory and more besides, which is scarcely a disadvantage. It is scarcely a defect in Einstein's theory of gravitation (to use an auspicious comparison) that it deals with inertia as well as gravitation. Similarly, one can scarcely hold it against the theory of relative identity that it deals with common-property statements as well as identity statements. By the standard principles of theory selection the relativist's theory is, for this very reason, to be preferred to the absolutist's.

If this seems only a very weak justification of relative identity after so long a discussion there is not much we can do about it. Plainly we are not going to achieve a knock-down argument against the absolute theory. It is, after all, provably consistent. The absolutist can thus defend it at every turn by rejecting principles extraneous to the theory. The relativist can at best firstly, argue ad hominem that the absolutist denies principles which he elsewhere avows; secondly show that some principles thus denied are intuitively plausible; and thirdly, show that his own theory is of much greater scope and power than the absolutist's. I claim that in what has gone before I have done all three.
APPENDIX 1

WIGGINS ON SORTALS

Wiggins' treatment of the concept of a sortal, like much else in his book, is extremely obscure. The concept is introduced early, in an extremely misleading footnote where Wiggins says that he is using 'sortal' 'in roughly the manner of the second part of P.F.Strawson's Individuals'. What Strawson says is the following:

A sortal universal supplies a principle for distinguishing and counting individual particulars which it collects. It presupposes no antecedent principle, or method, of individuating the particulars it collects.

But it soon becomes clear that Wiggins is not using the term 'sortal' in anything like this way. It is not unreasonable to take Strawson to be providing necessary and sufficient conditions for sortalhood in this passage, and this is certainly what Wiggins takes him to be doing. That Wiggins does not hold that Strawson's conditions are necessary and sufficient for sortalhood becomes clear immediately in Wiggins' discussion of the thesis, C, that:


2. Individuals, p. 168.

To specify the something or other under which a and b coincide is necessarily to specify a concept K which qualifies as adequate for this purpose, and hence as a sortal, only if it yields a principle of counting for Ks.¹

Wiggins holds that C is false. That it's falsity conflicts with Strawson's specification of sortalhood is made clear by Wiggins in a footnote:

C is commonly supposed to give not only a sufficient but a necessary condition of being a sortal concept (Cp. Strawson, Individuals, loc. cit. See also my 'Individuation', which is mistaken on this point.)²

This is not the only occasion on which Wiggins explicitly rejects Strawson's account. He says, for example, when dealing with a number of different accounts of what a sortal is that sortals are sometimes described '(not quite correctly,...) [as] terms which give a principle of counting or enumeration.'³

And later he explains why this is not correct. It is, he claims, perfectly possible to ask 'whether you at t₁ saw, (e.g.) the same oily wave as I saw at t₁', but there is no 'definite way

---

1. Ibid., p. 1.
2. Ibid., p. 65. The paper to which he refers is his 'Individuation of Things and Places' where he says: 'A term "K" expresses a substance-concept ... if and only if it is possible to divide up the contents of the world and isolate the Ks in it in one and only one way.... That is, there must be the possibility of a definite answer to the question "How many Ks are there in region R at time t?"' (p. 178.)
3. Identity and Spatio-Temporal Continuity, p. 28.
of counting the waves or oily waves in the area of sea we are observing.\(^1\) Thus 'oily wave' is a satisfactory covering concept for an identity statement but does not pass Strawson's countability criterion, nor the one that Wiggins gave in his earlier paper.\(^2\)

Wiggins adds as an after-thought that the Strawson criterion might be all right for 'substancehood in some very strict sense of substance which I leave to those enamoured of it to describe'.\(^3\) For, as he points out, identity statements can be covered by concepts for particulars which 'by certain strict standards, nobody would be entirely happy to call substances'; e.g. 'oily wave', 'volume of argon' and 'area of garden'.\(^4\) These fail the Strawson countability criterion, but can cover identity statements and are therefore sortals.\(^5\) However, the particulars covered by these concepts are not

---

1. Ibid., p. 39.

2. It will, as Wiggins seems prepared to admit (see fn. 3 this page), pass the weaker countability criterion of §3.3.

3. Ibid., Appendix 5.2, p. 60. Here Wiggins also goes some way towards distinguishing Strawson's strong countability requirement from weaker ones.

4. Ibid.

5. This inference, which is implied rather than stated, fails both for covering concepts (as we saw in §3.1) and for (D.II) completing concepts.
substances in the strict sense; and consequently for this strict sense Strawson's criterion may well provide necessary and sufficient conditions. It is thus quite plain that Wiggins does not accept Strawson's countability criterion. The puzzling thing is why he said, in the first place, that he used the term 'sortal' in 'roughly' the same manner as Strawson.

If the Strawsonian account is not what he wants, Wiggins has to provide an alternative. He considers various ways of picking out sortals, for example, articulating, classifying, drawing boundaries, counting and division of reference, and says that 'none of these ideas ... is quite correct enough.' He does not argue for this conclusion, but there is no cause to disagree. He does have a further point against these criteria, namely, that they are not 'quite independent enough of the notion of an individual or object to bear the weight which has to be borne by an orthodox definition'. I'm not sure why Wiggins thinks the definition of a sortal should be independent of the notion of an individual or an object, since he clearly doesn't need the type of semantics of Chapter Nine, and Wiggins doesn't enlighten us; but his first point is, I feel, sufficient.

At this stage in the discussion Wiggins seems about to admit defeat in the attempt to define the elusive notion of a sortal. He quotes Frege on the concept of an object: 'I regard a regular definition as impossible, since we have here something too simple [and, Wiggins adds: "too general"] to admit of

1. Ibid., pp. 28-29.
2. Ibid., p. 29.
But he hopes for clarification in another direction: 'If the general notion of a sortal is a purely formal notion we may at least be able to provide formal criteria for being a sortal.' But he begins this task straight-away but, alas, there is no connected discussion of these formal criteria; the full analysis has to be pieced together bit by bit in the course of his incredibly circuituous discussion of (D). But the first point of his formal analysis is: 'One of the clear facts about sortal concepts is that as a matter of fact they are used to cover identity statements.' And this is the thought which lies behind his Appendix 5.2. Wiggins takes this as his starting point and makes great use of it. From it, he claims, several things follow.

Perhaps the most important thing which Wiggins thinks follows is this:

[W]e must require of any concept ... which is a candidate to answer the question 'same what?' that it should give a principle of tracing which can be relied upon to preserve the formal properties of identity, sc. symmetry, transitivity, reflexivity, Leibniz' Law. This is of course a criterion of its being a sortal at all. If it cannot do this we shall

2. Identity and Spatio-Temporal Continuity, p. 29.
3. Ibid., pp. 29-40.
4. Ibid., p. 29.
This is, of course, highly contentious. However, Wiggins holds that every identity statement must satisfy Leibniz' Law; any statement which fails is not an identity statement. If he is right in this, and in the account he gives of the uses of sortals as covering concepts for identity statements, then satisfaction of Leibniz' Law is indeed required.

However, somewhat shady dealings are revealed if we look back to see by what arguments Wiggins establishes the validity of Leibniz' Law. The argument for Leibniz' Law takes place in Part I of Wiggins' book; and the bulk of the argumentation is taken up with discrediting examples of (R). But if it is a necessary condition of 'K's being a sortal that 'a =_K b' satisfies Leibniz' Law it makes little sense to discuss cases of (R), for (R) and Leibniz' Law are (unsurprisingly) incompatible. However, the discussion of the examples of (R) in Part I takes place on the basis of a different account of 'sortal' than the one given in Part II, namely Strawson's account. We can now see what a great, and illicit, service Strawson's account of 'sortal' does Wiggins. In Part I Wiggins uses Strawson's account to reject non-trivially as identity statements statements violating Leibniz' Law. Having thus

1. Ibid., p. 36. We see from this that Wiggins' reference to a concept under which a material particular may be 'counted, individuated and traced through space and time' (ibid., p. 1) was closer to his actual use of 'sortal' than the footnote reference to Strawson's use which was tagged to it. (By 'Leibniz' Law' Wiggins means (1.13) - I shall follow his usage here.)
established Leibniz' Law to his own satisfaction, Wiggins goes on to drop Strawson's account of sortals and, in Part II, proposes that the ability to cover an identity statement is a necessary and sufficient condition for being a sortal. Because he thinks that in Part I he has established that satisfaction of Leibniz' Law is a necessary condition for being an identity statement, he then goes on to claim that providing principles of tracing which satisfy Leibniz' Law is also a necessary condition of being a sortal. This enables him to rule out all cases of (R) whilst giving the appearance of not doing so merely by definitional fiat. The entire argument is based upon an equivocation in the analysis of 'sortal'.
APPENDIX 2

CARTWRIGHT ON QUANTITIES

We saw in §4.3 that Helen Cartwright treats 'quantity of $M$' as a universally applicable sortalization of '$M$'. She holds, for example, that only

The gold of which my ring is made is the same quantity of gold as the gold of which Aunt Suzie's ring was made.

is equivalent to:

My ring is made of the same gold as Aunt Suzie's ring used to be.\(^1\)

Moreover, cases in which we cannot replace '$M$' as covering concept by 'quantity of $M$' she treats as 'suspicious'.\(^2\) In certain cases 'quantity of $M$' can be fitted into the account I proposed in §4.4. We can always replace 'quantity of $M$' by 'collection of parts that are $M$' and when we can replace 'part that is $M$' by a sortal (as we can replace 'collection of parts that are gold' by 'collection of gold molecules', for example) we can subsume 'quantity of $M$' under 'Coll(S)' and define identity criteria as in §4.4. But clearly we will not be able to do this in every case. We need, therefore, to consider Cartwright's reasons for preferring 'quantity of $M$' to other

---

2. 'Heraclitus and the Bath Water', p. 478.
sortalizations. I do not want to give reasons for always rejecting 'quantity of M' as a completing concept but merely to argue that Cartwright has given no good reason for always preferring it.

Cartwright rules out, for example, 'piece of gold' and 'cup of coffee' as completing concepts on the grounds that 'they cannot be trusted'.¹ This is because one can diminish the amount of coffee in a cup of coffee by taking a sip but one cannot diminish the amount of coffee in a quantity of coffee. Similarly, Descartes' wax ceases to be a piece of wax on melting but remains the same quantity of wax.

But, of course, which sans you can trust depends on what you want to do. Obviously when mass terms are sortalized in one way the resulting term may very well provide different identity criteria than result when they are sortalized in a different way. (A result which doesn't surprise the relativist.) The point Cartwright makes is that 'Quantities, like sets, cannot grow or shrink.'² In other words, in certain respects, 'quantity' will admit of no change at all. (Of course, in these respects neither will '1.321 grm. precisely'.) Whilst in other ways (as in the melting of Descartes' wax) it will admit of very radical changes. On the other hand, 'piece' and 'cup' will admit changes not admitted by 'quantity' and will not admit the changes that 'quantity' does. But from this it does not follow that 'piece' and 'cup' are somehow defective or, in a vague way, 'not to be trusted'. Here, as elsewhere,

¹. 'Quantities', p. 32.
². Ibid.
you pays your money and you takes your choice. Cartwright
must at least show that the modes of change admitted by 'quantity'
ought to be admitted whilst those admitted by 'piece' and 'cup'
ought not. But she does not do this and I don't see how she
could for, in a general way, the changes we will wish to admit
and those we will wish to exclude will vary from occasion to
occasion.

Moreover, it may be objected that sometimes quantities
do change in ways that Cartwright says they don't. For example,
the volume of my coffee will diminish as it cools (though it
remains the same quantity of coffee as before); Descartes' wax
(though the same quantity of wax) will weigh less on the moon;
and the effects of special relativity may overtake anything.
Cartwright considers this objection and rejects it. She writes:

This objection rests on [a] confusion about
measurement. The measure ... provided by
'coffee' ... is neither a method of measurement
nor a measure of amounts of coffee.... If it is
true that two ounces of gold weigh less ... on
the moon, then it is true of any quantity of gold
containing the same amount of gold as one contain­
ing two ounces. And the volume of a cubic inch of
ice may or may not be one cubic inch.... But the
amount of wax in a cubic inch of wax does not
depend on conditions. It cannot be more wax, what­
ever its volume; two ounces of gold cannot be
less gold.¹

This passage seems to me a farrago of confusions which leads to
the absurd conclusion that a cubic inch of wax may be greater
or less than a cubic inch of wax. The trouble seems to be
confusion over the quantity/amount distinction which is made

¹. Ibid., p. 34.
more opaque because Russell's term 'magnitude' has been dropped. 'Magnitude' and 'amount' are by no means inter-changeable in ordinary language. We can talk, e.g., of the magnitude of an area, or of a distance and so on, but we cannot talk of a magnitude of gold - although we do talk of an amount of gold. Magnitude refers to the measure of a dimension, 'amount', on the other hand, has substantial connotations which make it easier to confuse with 'quantity'. It seems altogether better to stick to the Lockean term 'parcel' and the Russellian term 'magnitude'.

Cartwright seems to believe that a magnitude of gold is something over an above a measure of gold (e.g., the weight of a parcel of gold). But it is not. Suppose that a particular parcel of gold is transferred to the moon, it remains the same parcel of gold even though its magnitude (when measured by weight) diminishes. Thus it seems that a parcel (or quantity) of gold retains its identity through quantitative changes: it is a magnitude (or amount) of gold which does not. Thus if Cartwright is right in ruling out 'piece' and 'cup' on these grounds she should do the same with 'quantity' in favour of 'amount' or 'magnitude'. In fact, I see no reason why she should rule out any of them.

Her claim that cases in which 'quantity of M' fails as a sortalization are 'suspicious', where it is well-founded, indicates no more than the general suspiciousness of mass terms masquerading as completing concepts; and is ill-founded often enough to support my contention that 'quantity' is not a universally applicable san. Whilst I see no reason for a total prohibition of 'quantity of M' as completing concept,
I equally see no reason for a total prohibition of other sortalizing auxiliary nouns.
BIBLIOGRAPHY


[8] ———, De Anima, in [13], vol. iii.


[12] ———, Sophistici Elenchi, in [13], vol. i.


[31] CARTWRIGHT, RICHARD, 'Identity and Substitutivity', in [89], pp. 119-133.


[40] COOK, JOHN W., 'Wittgenstein on Privacy', in [105], pp. 286-323.


[64] ———, [Unpublished comments on Calvert, Relative Identity], MS., n.d.


[106] POOLE, ROSS, 'Are There Continuants?' (unpublished, n.d.)


--------, 'Identity, Ostension and Hypostasis', in [111], pp. 65-79.


--------, 'Reference and Modality', in [111], pp. 139-159.

--------, 'Reply to Professor Marcus', in [120] pp. 175-182.


--------, 'The Scope and Language of Science' in [120], pp. 215-232.


[163] WOODS, M.J., 'Identity and Individuation' in [27], pp. 120-130.