

WORDS WITHOUT OBJECTS¹

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ABSTRACT

Resolution of the problem of mass nouns depends on an expansion of our semantic/ontological taxonomy. Semantically, mass nouns are neither singular nor plural, they apply to neither just one object, nor to many objects, at a time. But their deepest kinship links them to the plural. A plural phrase — 'the cats in Kingston' — does not denote a single plural thing, but merely many distinct things. Just so, 'the water in the lake' does not denote a single aggregate — it is not ONE, but rather MUCH. The world is not the totality of singular objects, plural objects, and mass objects, for there are no plural or mass objects. It is the totality of single objects and (just) stuff.

1. 'Count noun ontologies' and the mass noun / count noun contrast

1.0. A division of nouns

Concrete or 'first-order' nouns (or maybe, concrete uses or occurrences of nouns) may be divided into two chief categories, that of nouns which are mass, and that of nouns which are count — words like 'wine', 'wool', 'water', 'xenon', 'beer' and 'food', on the one hand, and words like 'hill', 'house', 'atom', 'cat' and 'planet' on the other. Mass nouns, as I shall say, are (very roughly) words for *stuff*, and count nouns words for objects, individuals or *things*. With count nouns we may ask, truistically, 'How many ___?',

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while with mass nouns, we may only ask 'How much ___?'²

It seems appropriate to speak of *concrete* nouns, or uses or occurrences of nouns, so as to mark a contrast with those contexts in which nouns are used generically, or as so-called 'abstract' nouns. For the fact is that the words we class as mass nouns, in such contexts, may themselves be used for counting — for counting kinds or types — and phrases like 'a wine', 'one wine' and 'several wines' are perfectly in order. And it seems appropriate to speak of *uses* or occurrences of nouns, in part because some words are used concretely both as mass nouns and as count nouns: not only do we have 'less beer', 'less cheese', and so forth, we also have the *non-generic* 'fewer beers' and 'fewer cheeses'. Again, I use the dummy mass noun 'stuff', in part because its ambiguity of type and token nicely matches that of true mass nouns. 'Stuff' is used in talk of kinds or types, but it is used in concrete reference too. Where there is water in some jug, an utterance of 'the stuff in the jug' may constitute a reference to *the water* in the jug, but it may also be a way of speaking of *the liquid* in the jug — of speaking, that is, of the substance, *water*. 'Substance' itself, on the other hand, in its natural-language sense, is exclusively a word for kinds or types: 'the substance in the jug' can *only* designate the liquid in the jug, and not the water in the jug.

1.1. A neglected category

Surprisingly, complete neglect of this quite basic category of nouns, and of the corresponding category of stuff, is not historically unusual, in fact it almost seems to be a sort of norm. One writer rightly contrasts the outlook of 'the early pre-Socratics', with what he calls their 'mass-noun ontologies' — their preoccupation with the elements of earth, air, fire and water — with that of the 'count noun ontologists who came to dominate the field forever after'.³ Hume is by

no means atypical, when he writes in the *Treatise* of 'first observing the *universe of objects* or of body, the sun, moon and stars, the earth, seas, plants, animals, men, ships, houses and other productions' ⁴ For all their brevity, Hume's words explicitly encapsulate a certain general picture of the concrete world outside the mind — a picture of that world as simply one of concrete, discrete objects. The picture seems quite strikingly inadequate, Hume's list involves no mention of the diverse kinds of stuff which loom so large in everyday experience, as in our non-reflective thought and talk — no mention, e.g., of the water, wine or beer we drink, the air we breathe, nor of such substances as salt and sugar, silver, lead and gold. The point is not a point concerning terminology — not just a matter of the fact that Hume *describes* the world as one of 'objects'. It is rather that his list suggests some kind of blindness to examples of the group with which I am concerned. Though such examples are, without a doubt, not left intentionally from the list, their absence may suggest an inarticulate awareness of their unsuitability within a list of different sorts of *things* or *objects* there might be ⁵ And this serves just to emphasize a general question about Hume's, and very many other such accounts — why should one omit or somehow overlook so prominent a category as this, and conceive instead a universe exclusively of 'objects' in the first place?

The question is too large to deal with adequately in this context, I confine myself to one extremely brief and speculative thought. Nietzsche, ever suggestive, writes that our '*belief in things* is the precondition of our belief in logic. If we do not grasp this, but make logic a criterion of true being, we are on our way to positing as realities all those hypostases' ⁶ There is perhaps a built-in tendency of under-

standing best described as *classical* — a tendency to seek to pin things down, to represent the world, for thought, as wholly cut and dried.⁷ The category of *stuff* resists this tendency, it is at home instead within a world-view which makes space for boundlessness, fluidity and fusion, chaos and the breakdown of distinctions.⁸

1 2. Phenomenology, reduction and approaches to mass nouns

Now count nouns, it is generally supposed, are quite well understood, but mass nouns are another matter altogether. What has been called ‘the problem of mass nouns’ — which is centrally, perhaps, the problem of the logical form of mass noun sentences, and therefore also of their ontological significance — remains in my view unresolved. In part, at least, because we feel we better comprehend the logic of count nouns, I here pursue an understanding of mass nouns in terms of their relationships with count nouns — an understanding which will nonetheless, I hope, be non-reductionist in spirit.

In this, my strategy diverges from what may be called the ‘leading’ treatments of mass nouns — a loosely constituted group of views which construe talk of *stuff* in terms of talk of things, or which assimilate, in one way or another, the semantics of mass nouns to that of count nouns. Though mass nouns are widely perceived to resist assimilation into our ‘canonical notation’, the calculus of predicates, the chief response to this is to contrive some strategy whereby, ironically, resistance can be somehow overcome.⁹ *Contra* this, the thesis I here advocate, at least in bare essentials, is extremely simple: *what there is* which corresponds to concrete mass nouns is not objects, individuals or things — not discrete countables — at all, rather, it is (merely) *stuff*.

To adequately grasp this category of stuff it is of some importance to reflect, as well, on its phenomenology (where by 'phenomenology' I mean a neutral or perhaps pre-theoretical account of some phenomena which I suppose, in fact, to illustrate the formal, logico-semantic schema to here be introduced) The phenomenology which corresponds to our canonical notation is extremely simple, nothing is more easy to imagine than a range of discrete, persisting, concrete objects — rabbits, apples, rocks and trees — which are to figure as values of the variables But the phenomenology of stuff and our relationship to stuff is of an altogether different character from that of things and our relationship to things

It is hardly insignificant that *water*, in its liquid state, is commonly selected as a central case of stuff (or that 'water' is much favoured as a mass noun) There are, in an expository mode, good reasons for conceiving our relation to water as a sort of paradigm Liquid water, trivially, does not come in chunks, so far as water is concerned, it is not implausible to say that there is nothing in particular to be *identified* — no *objects* waiting to be picked out, no discrete items there to be 'pinned down'¹⁰ If unconstrained, *qua* liquid, water is in flux There are, of course, such things as puddles, pools and glassfuls, rivers and the like, but these are things that water sometimes constitutes or comes *in*, they do not pass muster as mere *instances* of water¹¹ (Indeed, it is precisely my thesis that, in a suitably determinate sense of this semi-artificial term, *there are* no instances of water)¹² Again, there may, for any given area at any given time, be more or less of it within the area, but 'more or less' does not bring with it '*objects* of a certain kind' — does not bring with it '*many, few or one*' — and there is not, as some maintain, a special class of discrete objects

which are in some way *bits* of water (so-called 'portions', 'samples', 'parcels', 'aggregates' or 'quantities' of water)

The phenomenology of stuff, in short, is to be situated in its *fluid* character — in the absence of *fixed reference points*, in terms of which our thought and our experience of stuff might otherwise perhaps be grounded. As Quine remarks, water is 'scattered in discrete pools and glassfuls still it is just "pool", "glassful", and "object", not "water" that divide their reference' [91] 'Water' by itself — the mass noun lacking individuating adjuncts — does not, he rightly claims, divide its reference.¹³ 'Water' lacks, for its extension, a class of discrete things of which the term is true, what there is which corresponds to 'water' is, quite simply, *water*.¹⁴ And to say (as Quine and others sometimes say) that 'water' does not *individuate*, is just, so I believe, to make this basic point. So far as such things do exist, the 'reference points' for stuff are the containers and the chunks — objects and not stuff. And the thought that the way to 'grasp' the notion of stuff is by firstly fixing some of it in a container (artificially 'stabilising' it, so to say) — this thought fails to see that the exercise is one in which we impose our fixities on the world, and therefore find in it our stamp.

1.3. The absence of the singular

What is perhaps the focal thought in all of this is not a complex one. To say that *there is* water is to speak indefinitely — in much the way we speak when we assert that *there are* cats (it is in just this manner that we say what *kinds* of stuff, or things, there are). However in the latter sort of case — the case of discrete things, e.g. of cats — indefinite assertions of existence, in the plural, may be always grounded at the 'deeper' level of the *definite* and *singular*. If it is true to say that there are cats in some specific region,

then we must expect to speak of *this* cat and *that* cat, and so on, in that region. But there is no such deeper grounding level in the case of water — semantically, there are no elementary units, individuals or ‘atoms’ to pick out. And in this key respect, the relationship we bear to water is dramatically unlike the one we bear to cats, the relationship is one which must effectively remain indefinite, and not ‘advance’ beyond this to the definite and singular.¹⁵ As Strawson in effect remarks, level one for mass nouns are the existential (‘feature-placing’) statements, nothing can be more illuminating than a statement with the form of ‘There is water on the floor’. At the risk of sounding paradoxical, the water on the floor (to which we may ‘refer’ if there is water on the floor) might persist while not retaining its identity — much as the apples on the table might not remain the same through time. To seek to ground existence here on something which retains identity through time — something in the category of Aristotle’s *substance* — is deeply misconceived, and crucially, perhaps, is contrary to our experience of stuff.¹⁶

2. The (one) semantic value of mass nouns

2.0. Mass nouns as semantically non-singular

My concern within this work is principally with mass nouns understood concretely — with mass nouns, that is, in their role as general terms or predicates.¹⁷ Now leading treatments tend to take a certain view of what mass nouns as general terms are *true of*, largely on the basis of a pre-existing view of what mass expressions in their referential roles *refer to*. But this seems very much to put the cart before the horse, and I here approach mass reference chiefly through examining mass nouns as general terms or predi-

cates For it seems plain that, where a referring expression does in fact contain a predicate, the semantic significance of the referring expression cannot fail to be a function of the significance of the predicate which it contains

Quantified or general sentences containing mass nouns find remarkably close parallels in sentences containing count nouns Alongside the sentences

- [1a] All water is pure
- [2a] Some water is pure
- [3a] No water is pure
- [4a] Some water is not pure

we may, for instance, put ¹⁸

- [1b] All sheep will bleat
- [2b] Some sheep will bleat
- [3b] No sheep will bleat
- [4b] Some sheep will not bleat ¹⁹

And to see the non-singularity of mass nouns it is perhaps sufficient to compare a classical base set of quantified sentences, such as [1b] through [4b], with a corresponding set of mass noun sentences, such as [1a] through [4a] The classical sentences are uniformly non-singular — they are plural — and the similarity of form between the groups suggests the non-singularity also of the mass noun sentences Furthermore, there is plainly a difficulty in representing [1a] – [4a] in singular form, as might be done with [1b] – [4b] Whereas [1b], for instance, might be paraphrased as ‘Each sheep will bleat’, no such natural paraphrase seems possible for [1a]

How far, exactly, do the parallels extend — just what, for instance, is the meaning of *all water* in [1a]? In one respect at least, the question has an unsurprising sort of answer To say that *all water* is pure is presumably to say that

whatever is water is pure — so that if, for instance, there is water in this glass, then the water in this glass is pure²⁰ Corresponding to the 'universal' sentence [1a], there is what I shall call (diverging from traditional nomenclature) the 'particular' sentence

[5a] The water (here) is pure

— rather in the way that corresponding to [1b] there is

[5b] The sheep (here) will bleat

Nonetheless, there are two very different ways of looking at the link between [1a] and [5a] — ways which correspond, in fact, to how [5b] itself is understood

The semantic value of [5b], as I propose to call it, may be either *singular* or *plural*, 'the sheep' may mean 'the one sheep' or 'the many sheep' And one conception of the link between [1a] and [5a] would involve the thought, most likely tacit but just possibly self-conscious or explicit, that [1a] is to [5a], much as [1b] is to

[5b'] *This* sheep will bleat

— rather than as [1b] is to

[5b''] *These* sheep will bleat²¹

[1b] itself, of course, is plural, as are [2b] through [4b],²² and on this view [1a] might be rewritten — now using 'water' as a term of art — as

[1a*] All *waters* are pure,

and [5a] as

[5a*] The (single) *water* (here) is pure²³

Depending on the context, mass nouns would thus be thought to *vary* in semantic value between singular and plural — in effect, a mass noun would be treated as a

'covert' zero-plural count noun (much, indeed, like 'sheep')²⁴

The trouble with this view, it seems clear, is that [5a] belongs with [5b''] rather than [5b'] Given the ambiguity, [5b] might itself be paraphrased informally in either of two ways — roughly, as either

[1] There are sheep in this place, and *whatever* things are sheep in this place will bleat

or

[11] There is exactly one sheep in this place, and *it* will bleat

And just so long as we confine ourselves to this informal style of paraphrase — the proviso here is absolutely crucial — it is plausible to put [5a] alongside [1] as

[1] There is water in this place, and *whatever* stuff is water in this place is pure²⁵

Since *whatever* is *some* of the water in this place is *also* water in this place, the suggestion that [5a] be put instead alongside [11] as

[2] There is exactly one ___ in this place

seems too obviously implausible to be worth pursuing Russell is, I take it, correct in holding that (as he puts it) '*the* in the singular involves *uniqueness*' The right conception of the link between [1a] and [5a] is that for which the mass noun in both cases has the *same* semantic value, as with [1b] and [5b''], not that for which it *varies* in semantic value, as with [1b] and [5b'] The 'instantiation' of a universal sentence need not after all be singular, but may assume the same semantic value as the universal sentence itself²⁶ In short, the non-singularity of mass nouns is evidenced not only in their combination with the traditional

quantifiers but equally in their combination with the definite article ²⁷

2 1. Mass nouns as semantically non-plural

But what, in this case, can the difference be between a mass noun sentence and a plural — between, for instance, [1] and [1]? In principle, the answer might just seem to be ‘not (very) much’, for my remarks are so far all consistent with a mass noun’s simply *being*, in effect, a covert plural count noun — but now like ‘clothes’ and ‘cattle’, as opposed to ‘sheep’, an unmarked plural invariable count noun — in which case, trivially, all of its occurrences *would* have the same semantic value, namely, *plural* ²⁸ But then mass nouns would have cognate singular ‘companions’, and the fact is that, in general, no such cognate terms exist ²⁹ There is indeed a kinship of mass nouns and plurals, a kinship which by now is widely recognised, if not perhaps so widely understood, but the contrast of the full-fledged mass noun and the plural is, if anything, more vital ³⁰

One way to further mark this contrast would involve attending to a group of sentences involving nouns like ‘furniture’ and ‘footwear’ — a group of sentences which are, while parallel to both initial groups, somewhere ‘in-between’ Syntactically, nouns in these sentences will count, along with ‘water’, ‘gold’ and so forth, as mass nouns, but they are also linked semantically to the plural — thus

- [1c] All furniture is made of wood,
- [2c] Some furniture is made of wood,

and so on. The contrast of the two initial groups may be glimpsed by way of contrast with this group, for it is surely tempting to suppose that [1c] and [2c] might be para-

phrased in terms of plural count nouns — that they are in fact semantically *atomic*³¹ It is tempting to suppose that it is a fact about the *meaning* of ‘furniture’ that there is what might be called a *least amount*, and that [1c] and [2c] are equivalent to

- [1d] All *pieces* of furniture are made of wood,
 [2d] Some *pieces* of furniture are made of wood

And if this account is right, then plainly, we can paraphrase [1c] into the singular

- [3d] Each *piece* of furniture is made of wood

But if, on the other hand, the claim is somewhat over-simple, still it can hardly be *far* wrong. The central difference between words like ‘furniture’ and ‘footwear’, and semantically full-fledged mass nouns such as ‘wine’ and ‘water’, is precisely that there is *no* intimate relationship between this latter group and any cognate plurals. By contrast with the case of ‘furniture’, that is, there are no units, elements or ‘pieces’ — no semantic ‘atoms’ — associated with such words as ‘water’³² And finally, comparing ‘furniture’ in [1c] and [2c] with ‘sheep’ in [1b] and [2b], we may say that *qua* semantic plural, the latter is quite trivially atomic. It is a central feature of the semantics of ‘sheep’ that there is a smallest quantity of sheep, ‘all sheep’ just means ‘all sheep-units’, i e., all *individual* sheep³³

2.2 The general structure of the mass/count contrast

Count nouns, typically, have two semantic values. Semantically, they (or rather, their occurrences) are either *singular* or *plural*. They sometimes signify a *single* thing, and sometimes *many* things. But the fact is that in either case, the very general category they represent is best described as simply that of *things*. And if count nouns thus have two

semantic values, mass nouns, I maintain, have only one. They are semantically neither singular nor plural, and the category they signify is best described as that of *stuff* (as merely that of stuff, again, and not as that of 'bits' or 'aggregates' of stuff)

In their role as predicates, semantically singular common nouns (i.e. *count* nouns) are distinguished from non-singular nouns (both count and mass) by their *uniqueness* of application, non-singular nouns which are count (i.e. *plural* nouns) are distinguished from non-singular nouns which are mass by their *atomicity*. And as I have already intimated, these points may be expressed by way of Russell's concept of denoting. That is, where 'P' is a semantically *singular* predicate, 'the P' denotes, just in case there is exactly one thing of which 'P' is true (and in that case, of course, 'the P' denotes uniquely)³⁴ By contrast, where 'P' is a *non-singular* predicate, 'the P' may denote where there is no one object of which 'P' is true. And where 'P' is an *atomic* non-singular predicate, it is a necessary condition of 'the P' denoting that there be a least amount of P of which 'P' is true. The general standpoint which I advocate may now be briefly summarised as in Table I below.

It is because mass nouns are not semantically singular, that they manifest a certain kinship with the plural, it is because they are not semantically plural, that they also manifest a kinship with the singular. The kinship of mass nouns and *plural* nouns is reflected in their shared affinity for 'all' and 'some', and in their joint antipathy for 'each' and 'every'.

[a] All sheep will bleat

Table I

	1 Singular (‘one’)	2 Non singular (‘not-one’)
3 Plural (‘many’)	X X	‘jugs’ ‘sheep’
4 Non-plural (‘not-many’)	‘jug’ ‘sheep’	‘water’ ‘molasses’

and

[b] Some sheep will bleat

have their counterparts in

[c] All water is pure

and

[d] Some water is pure ³⁵

On the other hand, the kinship of mass nouns and count nouns in the *singular* is indicated by their openness to ‘this’ and ‘is’ and other verbs whose value is non-plural, but not to ‘these’ and ‘are’ Along with

[e] This sheep will bleat

we find

[f] This water is pure ³⁶

That the subject-expression of [f], although like that of [e] non-plural, is also, unlike that of [e], non-singular, becomes apparent in the multitude of mass noun sentences in which the ‘quasi-singular’ and ‘quasi-plural’ aspects of the mass noun co-exist, this would make no sense if mass nouns varied in semantic value We have, e g , the truism

[g] This water is some water,

which involves not only the non-plural 'this' and the non-plural 'is', but also the non-singular 'some' Such aspects also plainly co-exist, of course, in the initial [1a] through [4a]³⁷

A more detailed presentation of the mass/count contrast, within the general framework as set out in Table I, might be along the lines of Table II below Here I contrast and compare the unmarked count noun 'sheep' with the plural invariable count noun 'clothes' and with the mass noun 'wine' — all with respect to an incomplete variety of quantifier-expressions (incomplete, since I have not included, e g, 'no', 'none of the', and cognates) The aim is to display some aspects of the structure of relationships between mass nouns and count nouns, and in particular to display some details of the kinship between count nouns in the plural and mass nouns, in relation to some varieties of quantification

Points of amplification

(i) Occurrences of count nouns are here classed as 'non-singular' (i e, for them, as 'plural') or as 'singular' depending only on what the associated quantifier calls for — an occurrence of 'sheep' is classed as plural where it goes with 'all' (cf 'all dogs'), and as singular where it goes with 'every' (cf 'every dog')

(ii) In columns 1 and 2, what I have designated the 'singular-linked non-singular' row is classed as *non-singular* because it takes a plural after the definite article, it is classed as *singular-linked* on account of the singular quantifiers 'every one', 'each one', etc (A similar but *non-singular-linked non-singular* construction would of course be possi-

Table II

	1 'sheep' (both singular and plural)	2 'clothes' (no singular, plural only)	3 'wine' (no singular, no plural)
1 Bare non- singular	'all', 'some' 'any' 'many'	'all', 'some' 'any' 'many'	'all', 'some' 'any' 'much'
2 Singular- linked non-singular	'every one of the' 'each one of the' 'any one of the'	'every one of the' 'each one of the' 'any one of the'	X
3 Bare singular	'every', 'each' 'a', 'one' 'any'	X	X

ble for each of columns 1-3, thus 'some of the sheep / clothes / wine')

(iii) For a count noun in column 1, there are bare non-singular quantifiers ('all sheep') which — albeit within a certain range of sentential contexts — are roughly equivalent to bare singular forms of quantifier ('each sheep', 'every sheep') By contrast, for a mass noun in column 3, or indeed a count noun in column 2, there are no bare singular equivalents for the bare non-singular quantifiers

(iv) The contrasts and comparisons of Table II reflect the closeness of a mass noun to a plural invariable count noun, as compared with a plural occurrence of a regular or zero-plural count noun (there are no occurrences of either

'clothes' or 'wine' which take the bare 'every', 'each', and so forth) The mass noun diverges from the plural invariable noun, precisely on account of the absence of a singular *link*³⁸

Philosophical remarks

(i) The general posit which informs this work, and which it is my purpose to substantiate, is that (the many wrinkles notwithstanding) the syntax of mass nouns and count nouns, along quite crucially with that of their associated quantifiers, is a not-so-far-from perfect guide to their semantics Hence misgivings are in order when it is proposed, as it all too often is, to make profound 'adjustments' in the syntax of mass nouns, in order to reflect what is alleged to be their 'true' semantics

(ii) It seems clear that unless the quantifiers 'all', 'some', 'any', 'no' etc are ambiguous, the predicate calculus fails to encapsulate their meaning, how they are read in a given context is a function of the kind of noun which falls within their scope

(iii) At a certain level of abstraction — the level, for example, of the dichotomy between 'the many' and 'the one' — questions of metaphysics and semantics tend to converge Indeed, questions of the former sort resolve themselves into the latter sort But furthermore, as these semantical reflections on mass nouns are meant to demonstrate, the general categories for what there is are not *confined* to those of one and many, singular and plural, our talk and thought are not confined to talk and thought of *objects* The existence of a semantical category which is not only non-singular but also non-plural — a category which is in this sense wholly non-objectual — is the essential foundation for any metaphysical account of stuff

3. Schematism of the difference in ontology

3.0 The meaning of *all water*

It is time now to return to the initial group of sentences [1b] through [4b]. These sentences are semantically non-singular, but it goes without saying that they range over individual objects. Although [1b] through [4b] are *plural*, it is just single, discrete objects that they represent. But yet, not all those sentences which are semantically non-singular are also plural, the corresponding mass noun sentences [1a] through [4a] are not. And in virtue of this *non-plurality*, they have no singular 'reductions'—no paraphrase from 'all' to 'each'—and call for no plurality of discrete objects over which to range.³⁹ They correspond, indeed, to reference, as illustrated by [5a], but the reference which they correspond to is semantically non-singular— and does not, on that account, cut any ontic ice.

Plural reference is reference to a number of objects, perhaps to a large number of objects, but its syntactically singular article notwithstanding, the expression 'a (large or small) number of objects' signifies not a single (large or small) object of some generally unrecognised type, but rather, many distinct objects. There are no distinctive units in the extension of a plural count noun, no units matching its distinctive plural form. So far as the understanding of 'the apples on the table' is concerned, I wish to sponsor a sort of nominalism: there is *no such* (single) *object* as the apples on the table—those apples are just *many* things, not one. And I mean to argue that just as there is no such object as the (one) object of a plural reference, so, more generally, there is no such object as the (one) object of a non-singular reference, and in particular, there is no such object as the object of a mass reference, no such object as, e.g., the water on the floor.

To say that what we refer to exists is, I take it, plainly true. But to say this is not to say that the distinctive form or character of reference (always) corresponds to a distinctive form of existence, and the fact is that in the plural case it does not. The category of objects in the extension of a plural noun is identical with that of the objects in the extension of its singular twin, the extensions of singular and plural are identical.⁴⁰ Similarly — and subject to significant qualifications considered in the sequel — mass reference consists in picking out an amount of stuff all at once, but the stuff thus picked out is no more a unit in the extension of the mass noun than are the things picked out a unit in the extension of a count noun. The distinctive form of mass reference no more corresponds to a distinctive form of existence than does that of plural reference. The expression 'a (large or small) amount of stuff' no more signifies a single object (large or small) than does the expression 'a (large or small) number of things'.⁴¹

The plural is, however, easy, there are the *individuals* of reference in the singular. The mass by contrast is much less so. To say that 'water' is a *bona fide* full-fledged mass noun, and so semantically non-plural, is just to say that its extension contains no atomic units (no units corresponding to individual pieces of furniture for the case of 'furniture', or to individual sheep for the case of 'sheep'). But to say this is to say that there are no units in its extension *whatsoever*. For the fact that we make concrete *references* to water no more implies the existence of *non-atomic* units in the extension of 'water', than the fact that we make concrete references to sheep implies the existence of *non-atomic* units in the extension of 'sheep'. To say, in the plural, what there is which corresponds to 'sheep', is just to say that *there are sheep*, similarly, to say what corresponds to 'water' is to say

that *there is water* (here, there, and maybe almost everywhere)

References to sheep may be, and references to water must be, non-singular, and when we make a non-singular reference to sheep, we refer neither to just one sheep, nor to a unitary *group* or a *collection* of sheep. We merely refer, in fact, to a number of sheep — to many sheep, to some sheep or to several sheep — and we must resist the seemingly ever-present theoretical temptation to ‘reduce’ the many to the one. And in a kindred way, when we make a non-singular reference to water, we refer neither to just one ‘water’ — there is no such atomic unit — nor again to a unitary aggregate of water. We refer, again, to an amount of water, to some water, and here too, we must resist a temptation to reduce the non-unit to the unit, the ‘much’ to the one.⁴²

3.1. Atomicity and grounding

There is a fundamental contrast between what I have called particular sentences which are semantically singular and those which are non-singular. And here, the guiding thought is that there is much wisdom in that tradition which accords a position of privilege to the singular. Particular sentences which are singular constitute *grounds* of a sort for general sentences — ‘This F is G’, for instance, for ‘Some Fs are G’. But when particular sentences are non-singular (e.g., ‘These Fs are G’) they constitute no satisfactory ground of generality. Or rather, such sentences can be regarded as grounding, just insofar as they also bring the promise of *reduction* to the singular, in an undemanding sense of ‘reduction’ such that they promise the possibility of the (individual) identification of (individual) Fs. It is just because each F is a *unit* in the extension of ‘Fs’, that the

identification of particular Fs provides a grounding for the truth of general sentences. But if, for some mysterious reason, the possibility of such Archimedean reference points were to be denied us, then particular plural sentences could claim no logical or ontological priority over the general plural sentences themselves. And the possibility of such reference points is denied us, precisely in the case of sentences involving mass nouns.

Recall again the contrast of

[5a] The water (here) is pure

and

[5b] The sheep (here) will bleat

[5b], as we remarked, may be paraphrased informally in either of two ways — ways which correspond to one or the other of the formal sentences

[iii] $[Ex][Sx \ \& \ (y)(Sy \Rightarrow By)]$

and

[iv] $[Ex][(Sx \ \& \ [y][Sy \Rightarrow x=y]) \ \& \ Bx]$

[5a], however, constitutes a major problem. There can be no objection to representing it *syntactically* along the lines of [iii] as

[3] $[Ex][Wx \ \& \ (y)(Wy \Rightarrow Py)]$

— so long as we are agreed that contrary to all appearances, this is *not* to be construed as a formula of the predicate calculus, and is to be read *merely* as ‘There is something which is water here, and whatever is water here is pure’ — the algebraic letters receiving merely as substituends expressions of the form ‘the water in this sub-region’⁴³

The exercise however seems completely pointless. Since the substituends are of exactly the same type as the expres-

sion with which the exercise began, we have no *analysis* of either [5a] or of its 'existential equivalent'

[1] There is water in this place, and it is pure

Since there are no *atomic* sentences which correspond to [1a] and its like, there is no question of an *underpinning* or a *grounding* of the generality attendant on

[1a] All water is pure

by reversion to a sentence like [5a] The generality attendant on [1a] merely *re-emerges* in the understanding of [5a] itself⁴⁴

The incapacity of particular sentences having the form of [5a] to constitute a 'ground' for universal sentences with the form of [1a] is better understood by comparison with the relation of [5b''], along with [5b] construed as plural, to [1b] Thus a universal *count* noun sentence (which in the nature of the case is plural, having the form 'All Fs ') cannot be grounded on particular *plural* sentences⁴⁵ A particular plural sentence is not itself an atomic sentence — it lacks that grounding atomicity which underpins the paraphrase of the universal plural 'all' in [1b] as the singular 'each' In short, we can have no understanding of [1b] on the basis of particular plural sentences⁴⁶

But where there are concrete plural sentences, then of course, and as a matter of necessity, the possibility of singular sentences exists, there is a fundamental level at which the problems of the plural may be at least pragmatically circumvented From the standpoint of our favoured formalism, the 'problem' with the particular mass noun sentences, by contrast, is just that there is *no* such basic grounding level of singularity The very same combination of non-fundamentality and unanalysability in relation to 'all' sentences obtains as with the plural — but *without* the

saving recourse to the singular. And so, there is a sense in which 'all water' is *itself* defective, since viewed from the standpoint of the canon, it promises something on which it simply cannot deliver. *Canonically*, again, we have no proper understanding of *either* [1a] or [5a] — from the standpoint of the canon, that is, both sentences are equally defective.⁴⁷ In straightforwardly distributive contexts, at least, plural reference constitutes no major problem — there is some sort of prospect of 'reduction' or replacement by the singular. The same is not however true for mass reference, even when such reference is distributive.

When represented in first-order predicate calculus, general sentences have a foundation-stone in the concept of an individual variable, and it is crucial to the notion of a *value* of a variable in this calculus that it be, precisely, a single first-order *individual* or object of some sort.⁴⁸ Furthermore the counterpart of the individual variable, among substantival *predicates*, is just the singular count noun. A notation based on count nouns is tailor-made for designating discrete objects of whatever kinds — holes and dents, particular events, sheep and Aristotle's 'substances' quite generally, inscriptions in the sand, and so forth. Mass noun sentences are thus simply not amenable to count noun treatments — they are, in a nutshell, unformalisable in our canonical notation, but this remark, by now, should hardly come as a surprise.⁴⁹

The thought that what there is corresponds in a peculiarly intimate way to reference is reflected no less in the calculus of predicates than in Aristotle's doctrine of substance. Aristotle's principle that substance is 'this-something' propounds a certain kind of harmony between a subject, or their language, and the world. Reference involves talk of this and that, and Aristotle's basic category is

just a 'this' or 'that' Substance by its very nature lends itself to being pointed out, distinguished and identified. The principle is tailor-made for horses, rabbits, snowflakes, planets and the like — things which may be counted and identified, counted *one by one*. The principle is tailor-made exclusively for reference in the singular, it is the only form of reference which can directly designate *a substance*. This is not a problem for the plural case, since Aristotle's harmony is re-established with the plural's grounding in the singular. But it surely is a problem with mass reference, on the other hand, this reference has no grounding in the singular, it is for ever out of harmony with what there is.

We do not adequately grasp the mode of being of a kind of stuff like water, when our thought of what there is is based in concrete reference. As the work of Quine especially suggests, there is a unique link between ontology and singularity. Questions of ontology and *reference* coincide, just where reference is semantically singular.⁵⁰ Concrete reference in the singular reveals directly what its content is for each and every reference of this sort, *there is* a single concrete object. By contrast, non-singular modes of reference are distinctive modes of reference, which correspond to no distinctive sorts of objects. With nouns which are non-singular, reference and existence must diverge, where reference is non-singular, reality and reference come unstuck. And in the last analysis, perhaps, the sorts of views I wish to here engage are nothing more than forms of what is sometimes called the *unum nomen - unum nominatum* fallacy. My preference however is for a concrete if unoriginal analogy: the postulation of 'mass objects' is akin to noticing one's footprints in the sand, but taking them to be a feature of the very sand itself.

Keywords

Mass nouns, mass expressions, ontology

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Notes

¹ Versions of portions of this work have been recently presented in talks at Clare Hall, Cambridge, the Czech Academy of Sciences, Prague, the Indian Institute of Technology, Bombay, the Institute for Philosophy, University of Salzburg, the University of Wisconsin, Madison, and at UCLA (special arrangements thanks to David Kaplan) I am grateful to those audiences for their sometimes very helpful comments, and I owe a particular debt of gratitude to Alan Sidelle for his unbounded support and enthusiasm

² For less peremptory remarks on the relationship between the class of mass nouns and the category of stuff, see P M S Hacker, 'Substance the Constitution of Reality', in *Midwest Studies in Philosophy*, Volume IV (Minneapolis, Minnesota, 1979) 239-261

³ Jose Benardete, *Metaphysics*, 36-7

⁴ 'After this', he continues, 'I consider the other system of being, viz , the universe of thought' *Treatise* 290

⁵ The point, it should be emphasized, does not concern the types or kinds of stuff *themselves* — the liquids, metals and so forth — for these, quite plainly, may be counted and distinguished, and treated, therefore, as distinct (generic) *objects*. The point concerns exclusively whatever stuff is of these kinds — so that, e g , whatever water there may be is not, as such, a class of discrete objects, individuals or things

⁶ The Will to Power, #516, original italics. Nietzsche also writes 'We need "unities" in order to be able to reckon that does not mean we must suppose that such unities exist' — *Will to Power*, 338. Quine by contrast, though he distinguishes the ability to

reckon — the use of algorithms — from semantic clarity, can make no sense of the thought that the imposition of canonical notation as a scheme for systems of the world might somehow meet legitimate resistance, in 'our canonical notation of quantification', he writes, 'we find the restoration of law and order' (242) In Quine's view, it would seem, lawlessness can somehow *always* be qualmlessly suppressed

⁷ Nowhere are the workings of the tendency more plain, than in approaches to phenomena of reference

⁸ Such a world-view — or better, perhaps, a cast of mind — is that, in essence, of romanticism And it is close to what Nietzsche calls the Dionysian attitude Nietzsche himself darkly writes of the world as 'a monster of energy — a play of forces and waves of force, at the same time one and many, increasing here and at the same time decreasing there, a sea of forces flowing and rushing together, eternally changing, eternally flooding back — with an ebb and a flood of its forms' *op cit* #1067 The best expressions of the romantic attitude are not however in letters but in painting and music — the paintings, for example, of J W Turner and the music of Debussy Debussy writes that because he loves music, he tries 'to free it from barren traditions that stifle it' Music, he continues, 'is a free art gushing forth, an open air art boundless as the elements, the wind, the sky, the sea Music is the expression of the movement of the waters, the play of curves described by the changing breezes' quoted on Debussy's *Preludes* book 2, performed by Gordon Fergus-Thompson

⁹ In a remark which is entirely representative, an advocate of one such treatment writes that his analysis "will consist in showing how to translate sentences containing mass nouns into a 'logically perspicuous notation' our background 'logically perspicuous notation' simply is the first-order predicate calculus the task is to paraphrase mass nouns in terms of names and count nouns" T Parsons, 'An analysis of mass terms and amount terms', in F J Pelletier (ed), *Mass Terms Some Philosophical Problems*, 138 This is the one and only collection of essays on 'the problem' of mass terms Some central features of the leading treatments of mass nouns are nicely illustrated in a recent essay by a perceptive (and indeed sceptical) sponsor of one such

approach, in which the writings of a fair selection of other sponsors are cited and discussed. See Dean W. Zimmerman, 'Theories of Masses and Problems of Constitution', *The Philosophical Review*, Vol 104, No 1, 53-110

¹⁰ It is, as one writer cautiously puts it, '*eminently difficult* to think of the Earth's water as composed of objects which are discrete and individuated' Gregory Mellema, ---, *American Philosophical Quarterly*, 1975, 165, italics mine. Of course with water, as with gold — and as indeed with cats — there are 'higher order' aggregates — pools of water, lumps of gold, packs of cats — but the identity of these does not involve identity for *water* or for *cats*. Debussy's remark — essentially a remark on the phenomenological analogy of certain sorts of music and the elements — is also worth reflecting on in this connection. Debussy's art, that of music, lends itself to the representation of boundlessness and flow in a way that the static, visual arts do not. Fog, mist, cloud, and water — the stuff of his impressionism — are much more difficult to *draw* than static bounded objects, mountains, houses, trees and so forth. The mode of existence of concrete objects is readily grasped, they are intrinsically demarcated, discrete and countable, they are eminently 'graspable' — but the mode of existence of stuff is less readily grasped, it is *not* so readily graspable.

¹¹ As Peter Simons and, following him, Michael Burke have noted, 'constitute', 'constitution' and the like need handling with care, they do not, unlike 'compose', imply a one/not-one contrast.

¹² The water in a glass, so I shall argue, is non-singular, its existential status is not that of 'an instance'. The concept of *an* instance is, so to speak, a *singular* concept, instances are plural, but stuff — the water in a glass e.g. — is neither singular nor plural.

¹³ In one key sense of 'individuate', it does not individuate ('or', as Quine evasively remarks, 'not much'). The concept of individuation, it should be said — like those of 'singular reference' and 'singular term' — is undoubtedly itself a part of the broader problem, these concepts typically involve conflation of the *general* notions of reference and 'picking something out' with the

particular notion of reference to, or the picking out of, a *single individual*

¹⁴ But now in the case of (solid) gold, for example, which comes in discrete bits and pieces — this encourages, if not in fact supports, the thought that stuff 'is' things. However it helps to bear in mind that there is gold — there are large amounts of gold — in the sea, but no bits and pieces.

¹⁵ And there is here, in this essential absence of the definite, an aspect of the concept of stuff which psychologically, at any rate, would seem to be profoundly unsatisfactory. We somehow (it would seem) desire existence to be *definite*. And it is precisely the unsatisfactory condition which this represents for us, which also explains the tremendous *psychological* pull of atomism.

¹⁶ In an eloquent passage on the omnipresence of change, Lucretius writes

Again, in the course of many annual revolutions of the sun a ring is worn thin next to the finger through continual rubbing. Dripping water hollows a stone. A curved plowshare, iron though it is, dwindles imperceptibly in the furrow. We see the cobble-stones of the highway worn by the feet of many wayfarers. The bronze statues by the city gates show their right hands worn thin by the touch of travellers who have greeted them in passing. Whatever is added to things gradually by nature and the passage of days, causing a cumulative increase, eludes the most attentive scrutiny of our eyes. Conversely, you cannot see what objects lose by the wastage of age — or at what time the loss occurs.

The paradigm of concrete 'things' or 'objects' lies in Aristotle's category of *substance*, Aristotle introduced the concept precisely to theorise the phenomena of identity and persistence through the omnipresence of change. And it seems clear that the Apollonian / classical standpoint is one that is most comfortable with a substance-centred outlook on the world, but such a view loses sight of that which in changing does not remain the same.

¹⁷ It is my working hypothesis that 'abstract' or generic uses of nouns are best approached by way of their concrete or specific uses, and not (Platonistically) vice-versa.

¹⁸ I choose a *zero-plural* count noun here, since its syntax, if not

the grammar of the sentential contexts in which it finds itself, comes as close as that of any semantically full-fledged count noun to the syntax of a mass noun. And the particular *predicate* I here choose has the syntactical advantage, in these contexts, of making no distinction between singular and plural. In fact the entire phrase which follows the quantifier — ‘sheep will bleat’ is invariant between singular and plural forms of universal quantifier, ‘all’ and ‘each’, and between semantically singular and plural readings of a definite description.

¹⁹ To avoid confusion in regards to ‘some’, I simply decree that its use herein is never stressed — that it is not the ‘some’ involved in talk of unidentified individuals, as in ‘Some turkey spilled my wine’, but is the ‘some’ which among other things is used with plurals as a quantifier.

²⁰ In just this sense, [1a], much like [1b], may be said to be a *distributive* sentence. Notice that in [1a], ‘water’ cannot be paraphrased in terms of ‘molecules of H₂O’, or some such phrase, the impurity of water could hardly consist in the fact that water *molecules* are pure.

²¹ Given some appropriate statement of the presence of sheep, [5b’] and [5b’'] are equally entailed by [1b].

²² To be precise, all four sentences *may* be read as plural, and [1b], [2b] and [4b] *must* be read as plural. I comment further on this matter in the sequel.

²³ In ‘Heraclitus and the bath water’, *Philosophical Review* 1965, 466-485, Helen Cartwright remarks that it ‘is plausible to speak as Quine does of “a water” and “two waters” simply *inventing* a count noun if one must, since the language does not provide one’ [474].

²⁴ Just this would be the view of one who, like Cartwright, supposed that [1a] was equivalent to ‘For each x, if x is water then x is pure’. There are many differences among what I have called the leading views, but in general, they would seem to be committed to the claim that mass nouns do indeed vary in value from context to context. Whether this is consistent with maintaining that mass reference is always singular is a question I do not here pursue.

²⁵ The point of the proviso will be obvious enough, canonical analysis of [i], which is a plural, calls for singular 'reduction' — 'There is *at least one* sheep and whatever *object is a sheep*' — and it is at just this point that [i] and [1] diverge. It should be pointed out that the analysis of mass noun sentences is far more sensitive to the nature of the contained predicates than is the case with count noun sentences. Thus if [1a] were replaced by 'All water contains impurities', so that instead of [5a] we wrote 'The water (here) contains impurities', then we could not write 'There is water in this place, and *whatever* stuff is water in this place contains impurities', that would not follow, all that would be implied would be 'There is something which is water in this place, such that whatever is some of it contains impurities'

²⁶ The position here advanced should be distinguished from one which is not uncommon in the literature — a position which *characterises* or *describes* mass reference as non-singular, but nonetheless construes it as denoting single objects. On my conception of 'non-singular', that view is close to incoherence. Among other things, it seems to involve both the view that mass nouns vary in semantic value, and the view that mass reference is exclusively singular. It is examined in Ch. II, and elsewhere.

²⁷ It is impossible not to notice that there is potential conflict in this argument with part of that grammatical taxonomy which is embodied in the average dictionary. While I speak of such terms as 'is', 'contains' and so forth as *non-plural*, traditional grammarians would tend to call them *singular*. But this, if it means something *more* than just 'non-plural' (as it surely ought to) cannot be correct. The appellation has semantic import, to call a verb or noun phrase 'singular' imputes a value of *just one*, whereas if I am right, this imputation must, with mass nouns, lead to incoherence. The traditional taxonomy is not however carved in stone, and is hardly a consequence of sustained reflective thought, or of any systematic *theory* of grammar, but merely of such superficial observations as that verbs like 'is' are commonly enough conjoined with count noun phrases which *are* (self-evidently) singular. 'Syntax', as Leech observes in this connection, 'is much less rich in dimensions of contrast than is semantics'. It is, nevertheless, worth re-emphasising the distinction between the *inherent*

syntax of a word — the 'objective facts' concerning its syntactic features, which may very well embody or reflect its (actual) semantic powers — and the efforts of grammarians to incorporate these features in taxonomy, the corresponding *theory* of its syntax (which may sometimes get it, along with its semantic implications, wrong) It should therefore be clear that I perceive no tension between (the accounts I offer of) the actual syntax and semantics of mass nouns It is crucial that the grammar of a term — in this case a mass noun — not be judged merely on the basis of occurrences with verbs, but also with articles, quantifier words and so on

²⁸ If the role of quantifiers is anything to go by, they could not all be *singular*, since 'all' does not combine with count nouns in the singular The meaning of 'all' is such as to preclude its combination with singular occurrences of count nouns — it requires the general terms with which it is conjoined to be *non singular* At the same time, 'all of the ' (along with 'some of the ') may be conjoined with *both* plural and singular occurrences of count nouns, and 'all' may be used with at least some proper names

²⁹ Whatever its syntactic stripe, if some term 'P' is to be counted as semantically plural, it is essential that such forms of words as 'one of the P' and 'each of the P' make sense And where 'one of the P' makes sense, there must also be the possibility of some singular count noun 'S' such that 'one of the P' counts also as 'one S' This does not, naturally, preclude the typographical identity of 'P' and 'S' In this regard, the cases of 'cattle', 'cows' and 'sheep' all differ Quine, quite unaccountably, goes so far as to describe 'cattle' itself as a *mass term* ('Ontological relativity', in *Ontological Relativity*, p 36) But even *syntactically* — unlike, say, 'furniture' and 'clothing', to be considered directly — the word fails the above fairly uncontroversial test And it is precisely where a term which is syntactically plural lacks a singular companion — e.g. the case of 'groceries' — that we have reason to be concerned as to the *bona fides* of its plurality

³⁰ Imperfect recognition of the non-singular status of mass nouns shows up directly in accounts of their semantics, thus it is I think *extremely* unlikely that a theory of plural reference as reference to

'first-order sets' would have acquired anything like the currency of the theory of mass reference as reference to 'first-order aggregates', the persuasiveness of the latter view is greatly increased by the tacit thought that mass reference is *not* in fact non-singular

³¹ It will rightly be protested that the category of mass nouns is far more diverse than I have so far here acknowledged [And *also* that this approach is implicitly reductive, for if 'atomic' mass nouns are ruled out as non-genuine, what of the non-atomic but particulate?] In particular, the suggested dichotomy between two chief groups of nouns which are syntactically mass — between 'true' mass nouns, which are semantically mass, and 'false' mass nouns, which are semantically plural or 'atomic' — is especially misleading. There are, for instance, many *bona fide* mass nouns which, though non-atomic, are semantically *particulate* 'Sand', 'snow', 'dust', 'gravel' and so on all involve some notion of constituent particles — grains of sand, flakes of snow, etc — but in no case is there an implication of ultimacy, more coarsely grained sand may be broken down into more finely grained sand. The idea of a category of 'words without objects' is then *inter alia* the idea of that sub-group of mass nouns which has no implication of particulate composition of any sort. Words without objects are then words without an implication of particulate composition, without an implication of objects *constituted* — unlike, say, the notion of ice, which being the notion of a solid, seems to be the notion of something which must come *in chunks* — and (centrally) without an implication of being a type whose existence is *eo ipso* that of objects or 'instances'. Whether a certain type of stuff must have constituent particles, in the sense that a specific mass noun must be linked to a semantically plural noun, is the clearest and most readily answered question. Whether a certain type of stuff, or perhaps even stuff in general, must constitute objects is less clear, there are cases such as 'flesh' and 'wood', where to say that some stuff is wood is to say it was part or parts of a tree or trees. Further point whether a noun is a *bona fide* mass noun or not cannot hang on whether or not it lacks constituents, it hangs on whether we say it is composed of Fs or just is Fs [etc]

³² [1] Although it is consistent with the possibility, to say that

there is no (semantic warrant for the) concept of a least amount of water is not to say that water must be *infinitely divisible*, any more than to say that there is no concept of a smallest *heap* is to say that *heaps* must be infinitely divisible. It may just be indeterminate whether something is water or not [11]. A distinction must also be drawn between those nouns which are semantically *atomic* and those which are merely semantically *particulate*. There is e.g. a meaning-relationship between 'sand' and 'grains of sand', but since grains are typically divisible into smaller grains, the same *sand* need not be the same *grains*, and the concept of a grain of sand is not in any very straightforward sense that of a smallest amount of sand. Only in the case of mass nouns which have the merest *syntactic* status as mass nouns — 'clothing', 'footwear' and so forth — is it true to say that there is an *a priori* requirement — and an extremely thin one at that — for 'same stuff' implying 'same particles' or 'same elements' (in some broad sense of 'particles' and 'elements')

³³ Grammar in fact permits the use of the term 'amount' to cover both 'amount of water' and 'amount of sheep', 'amount of peas', etc. In this usage, the *least amount* of peas or sheep is just a *single* pea or sheep.

³⁴ This may be understood either as a way of explaining 'exactly one thing' by reference to 'semantically singular predicate', or vice-versa.

³⁵ The claim that mass nouns have no instances is then closely analogous to a claim I would also wish to endorse, to the effect that plural nouns, *qua plurals*, have no instances. There is a tendency to suppose that what it is for a substantival term or concept to have instances is not to be distinguished from that term or concept's having application, for there to be something which 'falls under' it. However, although it is natural to say that there are objects to which the term 'sheep' may be applied — both *this* sheep and *these* sheep, for instance — it is appropriate only to say that *this* sheep is *an instance* of sheep, 'instance', like 'object', has both singular and plural forms, and *these* sheep are not *an instance* of sheep, they are *some instances* of sheep — that is, *each one* of them is a distinct instance of 'sheep'. The plural use of

'sheep' has only *singular* instances, and such instances are precisely what is lacking in the case of a noun which is not only non-singular but also non-plural. There is something which falls under the concept *water*, but it is not individual *waters*, and so not *instances* of water.

³⁶ Evidently, straightforward *paraphrase* of [a] but not of [c] into the singular is possible, employing 'each' or 'every' with a count noun in the singular. But 'all' can no more be *replaced* in [a] by either 'each' or 'every' than it can in [c]. The deeper difference between 'each' and 'all' (applied to count nouns) becomes apparent in the context of *collective* predications.

³⁷ This point supplements the observation that [5a] must be analysed along the lines of [1] and not [2].

³⁸ In fact, it would be possible to introduce a further column between columns 2 and 3 — a column for just such terms as 'clothing'.

³⁹ It is, as one writer cautiously puts it, '*eminently difficult* to think of the Earth's water as composed of objects which are discrete and individuated'. Gregory Mellema, *American Philosophical Quarterly*, 1975, 165, italics mine.

⁴⁰ In broad outline, I would wish to endorse the argument of Richard Vallee in his paper 'Plural sentences and semantic ambiguity', read at the Fourth Analytical Philosophy Conference in Florianopolis, Brasil.

⁴¹ Pandering to the proclivity for reification, we may *say* that a mass noun is true of amounts of stuff, but the *façon de parler* is just that. At the risk of verbal paradox, we might *also* say that the amounts of water in Ontario are no more discrete individual objects than are the numbers of wolves within the province. We may *say* that there is an amount of water in this glass, and an amount of water in that glass, but it no more follows that there are *two amounts* of water in those glasses, than it follows from the fact that there are a number of apples in this basket, and a number of apples in that basket, that there are *two numbers* of apples in those baskets. In the former case, we may say once again that there is *an amount* of water in those glasses, and in the latter case, that there are *a number* of apples in those baskets.

⁴² The fact that several sheep are collectively referred to *is*, in a

certain sense, arbitrary or ungrounded, and has nothing whatever to tell us about the character of the extension of 'sheep' This is not however to say that we cannot *introduce* or *define* some notion of collection, such that objects which are collectively referred to may be said to compose a collection

⁴³ There is here no talk of 'at least one', or of 'each or every object which is'. Quantifiers are in fact employed with mass nouns, once again, but on the mass nouns' terms, and not on the terms which they apply with count nouns (It is a nice question whether, lacking variables etc., we should write 'There is something which is water')

⁴⁴ A Russellian definite denoting sentence, of course, is not itself atomic, it too involves generality. But *corresponding* to any true Russellian denoting sentence there must be an atomic sentence, on account of its semantic singularity, *what* is denoted may be also designated by a *constant* — at which point the generality evaporates

⁴⁵ To see the force of privileging reference in the singular, it is perhaps enough to see that there is no distinct ontology of reference in the plural. As I argue in chapter IV, when the question at issue is that of understanding the category or kind to which a non-singular substantive corresponds — of understanding *what there is* in its extension — the phenomenon of *reference* is the wrong phenomenon to focus on, it constitutes no 'ground' for statements of existence. The question can be answered as with the singular — sheep, concrete individual things, etc., but we should not seek a *grounding* of the category now in plural reference

⁴⁶ Whether singular or plural, particular count sentences are of essentially two basic types — those which involve *denoting*, and those which involve so-called 'identifying' reference, and paradigmatically, *demonstrative* reference. And where a particular plural sentence involves denoting, analysis evidently requires the introduction once again of 'all', as in [iii] above — and so for us is *no* analysis. And where the sentence involves demonstration or identifying reference, the sentence is neither a basic grounding sentence — that is, an *atomic* sentence — nor can it be analysed

or unpacked into such sentences. Plural demonstration can neither be semantically unpacked, containing as it does no *individual* designations for the objects demonstrated, nor treated as semantically fundamental, being correlated one to many with its objects. From our favoured formal point of view, it cannot but be judged defective.

⁴⁷ So much the worse, one might be inclined to say, for the standpoint of the canon, but matters are not, I think, quite so straightforward.

⁴⁸ Alternatively, we may say that a *substituend* for a variable in that calculus can only be an *individual constant* or singular term.

⁴⁹ Concerning the understanding of mass nouns, Leech laconically remarks that 'there are vast areas of meaning on which the logician has scarcely cast an eye, it is easy, therefore, for him to work with certain simplifying assumptions (e.g. that nouns denote sets of individuals, that adjectives denote discrete properties) which do not stand up to the evidence of even such simple sentences as "Wool is warm"'. G. Leech, *Semantics*, Harmondsworth, Penguin (1981), 154.

⁵⁰ Quantification captures what is said to be, just to the extent that it captures the *bona fide* singular terms, the terms of our 'unequivocally referential' idiom. In so far as reference is the key to ontological commitment, then it is indeed, as Quine suggests, exclusively to reference in the singular that we must look. It is not, of course, as if Quine even *contemplates* the implications of non-singularity. He thus contrasts the singular/plural dichotomy unfavourably with what he calls 'the dichotomy between *singular terms* and *general terms*', maintaining that this latter distinction, while 'inconveniently similar in nomenclature to the grammatical one between singular and plural, is less superficial' (*Ibid.*, 90). The remark is puzzling, since the specific form of the contrast between predicates and referring expressions which is incorporated into his (and our) 'canonical notation' is *precisely* that between predicates and referring expressions which are semantically singular — singular in the natural-language or numerical sense.