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DESCRIPTIVE METAPHYSICS, NATURAL LANGUAGE METAPHYSICS, SAPIR-WHORF, AND ALL THAT STUFF: EVIDENCE FROM THE MASS-COUNT DISTINCTION

ABSTRACT: Strawson (1959) described 'descriptive metaphysics', Bach (1986a) described 'natural language metaphysics', Sapir (1929) and Whorf (1940a,b, 1941) describe, well, Sapir-Whorfianism. And there are other views concerning the relation between correct semantic analysis of linguistic phenomena and the "reality" that is supposed to be thereby described. I think some considerations from the analyses of the mass-count distinction can shed some light on that very dark topic.

1. INTRODUCTION: LANGUAGE AND ONTOLOGY

I begin this work with some reminders of philosophical positions that have been held in the last 75 years or so—and are still held today by many—which relate to the way(s) that language might be thought to characterize reality. I do not intend to describe these positions in full detail, but only state the parts that I will look to when discussing the particular linguistic focus of this paper, namely, the +MASS/+COUNT distinction. Furthermore, as a defense against the charge of tilting at straw windmills, I spend more space quoting the relevant authors than I spend in using my own words to describe their positions.

We will be talking about meaning, about conceptual frameworks, and about semantics. Each of these is understood in different ways by different theorists, and so it is sometimes difficult to keep all the claims and counterclaims in their appropriate places. I'm afraid that I haven't done that.

1.1. Universalism

Universalism, in the sense to be employed here, is the view that—in the realms under discussion—all humans are the same. The realm might be language, or conceptual framework, or access to "the world"; but whatever the topic under consideration is, Universalism is the viewpoint that everyone has the same knowledge or underlying abilities. There are varying ways to be universalistic, and we here will look at two. But not every theory about these topics allows for Universalism, and that is also part of the story to be told a little later.

1.1.1. Descriptive Metaphysics

In the Introduction to his book *Individuals* (Strawson 1959), Peter Strawson characterized his project of Descriptive Metaphysics in the following terms:

> Descriptive metaphysics is content to describe the actual structure of our thought about the world, revisionary metaphysics is concerned to produce a better structure . . . [Descriptive metaphysics is a] kind of metaphysics which needs no justification at all beyond that of inquiry in general.

Descriptive metaphysics, as a philosophical activity, is closely related to other philosophical methods and activities that were common at the time (1959). The difference is only in the breadth and depth of the activity, which. . . unlike the related methods within "ordinary language philosophy". . . aims to show even more general and "deep" features of human cognition than one can get just from looking at what underpins and justifies the analysis of ordinary language.

> How should it [Descriptive metaphysics] differ from what is called philosophical, or logical, or conceptual analysis?

> It does not differ in kind of intention, but only in scope and generality. Aiming to lay bare the most general features of our conceptual structure, it can take far less for granted than a more limited and partial conceptual inquiry.

Nonetheless, the analysis of language usage is the best way to proceed in philosophical inquiry. Descriptive metaphysics is at bottom just a deeper investigation than what is revealed by the analysis of language in the ways that were pursued by the ordinary language philosophers.

> Up to a point, the reliance upon a close examination of the actual use of words is the best, and indeed the only sure, way in philosophy. But the discriminations we can make, and the connexions we can establish, in this way, are not general enough and not far-reaching enough . . . The structure [one] seeks does not readily display itself on the surface of language, but lies submerged.

Strawson's book has two parts. In the first part, he says, the aim is to establish "the central position which material bodies and persons occupy among particulars." These kinds of particulars are "the basic or fundamental particulars." In the second part of the book, the goal is "to establish and explain the connexion between the idea of a particular in general and that of an object of reference or logical subject." The result of that second part is, as Strawson puts it, a demonstration that "the particular [is] the paradigm logical subject." So as we see, and as Strawson is at pains to emphasize, the results of the conceptual-metaphysical investigation and of the linguistic investigation coincide: language really captures the picture of the world that we in fact have.

But what, it might be asked, should we expect to find, when investigating the deep, underlying structure of our language and conceptual scheme? What aspect(s) of our conceptual scheme will be uncovered?

> There is a massive central core of human thinking which has no history—or none recorded in histories of thought; there are categories and concepts which, in their most fundamental character, change not at all. . . . They are the commonplaces of the least refined thinking; and are yet the indispensable core of the conceptual equipment of the most sophisticated human beings. It is with these, their interconnexions, and the structure they form, that a descriptive metaphysics will be primarily concerned.

As we see clearly in these quotations, Strawson thinks that these underlying features are not due to cultural accidents, such as privileged birth or educational milieu.

But who is the 'our' in "our conceptual scheme" and "our thought about the world"? Strawson's remark about "central core of human thinking" suggests that he means to include all living people, or perhaps all living adult people, or perhaps all adult homo sapiens who ever lived. Keeping in mind that this conceptual scheme is to be revealed by the an investigation of language, it seems to follow that Strawson thinks that any and all languages will, upon investigation, yield the same conclusion that "the particular is the paradigm logical subject." Or as we might be tempted to put it, Strawson believes that there are universals of language, such that all languages will manifest them in their underlying structures, and that the notion of a particular as a logical subject will be one of these linguistic universals.

For that reason we call the project of Descriptive Metaphysics (with its concomitant view of how language reveals conceptual framework, and the view that any language will yield the same framework) *Universalist*.

1.1.2. Natural Semantic Metalanguage

Suppose one thought that Strawson was basically correct in his view that by an analysis of ("the least refined part of") a natural language one could "lay bare" the conceptual schemes of the speakers, and that those in turn would correctly describe "reality". But suppose that one also thought there was a serious problem in just *assuming* that every language had the same "least refined parts", and believed therefore that there was an important danger lurking in the strategy of investigating just one's own native language.

To counter this danger, one might try to perform the "ordinary language analysis" in all or (at least) many of the world's languages. Assuming that Strawson is right in his view that this is the only sure way to get at the conceptual scheme of speakers of each language, we

would be faced with the "least refined part" of a number of conceptual schemes. It is now perhaps an empirical claim that each of these conceptual schemes is the same, on these "least refined parts".

How might one find that out? Here's the answer from Natural Semantic Metalanguage: we concoct a "basic, primitive" language in which to describe the semantics (=basic features of the conceptual framework) of one language—English, say—and try to use that metalanguage to describe the semantics (=basic features of the conceptual frameworks) of many other languages. As with any empirical task, such an endeavor may take many iterations, finding that the initial "basic language" needed some augmentation to describe other languages or that the initial "basic language" had some material that was only applicable to English and perhaps a few other languages, but not relevant to the vast majority of languages.

The resulting basic, primitive language would serve as a semantic metalanguage for the world's languages, and by the Strawsonian hypothesis, it would thereby characterize "the least refined part" of *all* peoples' conceptual schemes. And hence it would adequately describe (that portion of) "reality". Like Strawson's position, this attitude is also *Universalist*. But the difference is that because of the many different languages, one expects that the elements of the "unrefined parts of" the universal conceptual framework will be rather different than Strawson discovered in his investigation of English.

Here's how this viewpoint is expressed by the two most prominent practitioners of Natural Semantic Metalanguage (NSM) theory, Anna Wierzbicka and Cliff Goddard. For them the question is (from Wierzbicka 1994):

> Do all the peoples of the world have a shared set of concepts, forming the common conceptual foundation of all cultures? . . . [T]he universalist position asserted itself, notably in the writings of Franz Boas and his associates, and in the doctrine of 'psychic unity of mankind' (Boas 1938). . . . This volume attempts to vindicate the doctrine of the psychoic unity of humanity by radically changing its status—from a faith (for some), and a politically correct slogan (for others), to a verifiable hypothesis, tested in and supported by empirical research. (pp. 1ff)

The general outlook is further described in Goddard (1994):

> *Semantic Primitives Principle.* There exists a finite set of undecomposable meanings—semantic primitives. Semantic primitives have an elementary syntax whereby they combine to form 'simple propositions'. (p. 8)
>
> *Natural Language Principle.* Semantic primitives and their elementary syntax exist as a minimal subset of ordinary natural language. (p. 10)
>
> *Expressive Equivalence of NSMs.* The NSMs derived from various languages will be semantically equivalent, that is, have the same expressive power. Any simple proposition in an NSM based on L_1 will be expressible in an NSM based on L_2, L_3 and so on. (p. 10)

And finally a strong form of semantic Universalism is contained in the "Isomorphism Principle", which is "one of the distinctive hallmarks of the NSM program."

> *Isomorphism of NSMs.* The simple propositions which can be expressed through the NSMs based on different languages will be fundamentally isomorphic. (p. 10)

Concluding this rapid description of the Natural Semantic Metalanguage theory, we point to another acknowledged aspect of its universalism—that each of the world's languages has a set of lexical items or morphemes whose primary meanings are identical to each other. Goddard says that "this conclusion is fundamental" to the empirical work:

> *Strong Lexicalisation Hypothesis.* Every semantically primitive meaning can be expressed through a distinct word, morpheme or fixed phrase in every language.

Wierzbicka and Goddard acknowledge that this sort of universalism has been advocated or presupposed by many other writers; they cite Katz 1981, pp. 226, 238, Miller & Johnson-Laird (1976); Wilks

(1976, 1977); Schank (1972). But they claim that theirs is the first attempt to ground it empirically in detailed field work from many different languages.[1]

One further question remains: does Natural Semantic Metalanguage agree that an analysis of the use of language is a way to describe accurately "the real world"? Wierzbicka and Goddard have been surprisingly coy about this in their writings, although some critics (e.g., Matthewson 2003) have claimed that NSM is committed to a rather strong form of the Sapir-Whorf view that there is "nothing more" to reality than language, and this varies from culture to culture. Matthewson (p. 272) cites the following from Goddard (1998):

> . . . the comparatively muted quality of the English [emotion] words (except for *joy*, which is the least common of them) is consistent with the traditional Anglo-Saxon dislike of extreme emotions.
>
> . . . the emotion lexicon actually helps constitute the culture.

And she claims that Wierzbicka is "radically Sapir-Whorfian", citing from Wierzbicka (1988a):

> Even concrete concepts such as 'mouse', 'rat' or 'worm' are culturally specific and determined in their content by the speakers' interests and attitudes as much as by any objective 'discontinuities in the world'.

And Durst (2003), the target article that Matthewson is responding to, is cited as saying

> . . . grammatical categories, syntactic constructions, parts-of-speech membership, etc. are considered as non-arbitrary instantiations of culture-specific conceptualizations based on a few universal principles.

Clearly, these statements *could* be taken to be some form of Sapir-Whorfianism (whatever it may be. . . we'll discuss that later), but they needn't be so taken—or at least, so it seems to me. The prevalence

of the "universalist" talk in NSM seems to count *against* the understanding of NSM as a kind of Sapir-Whorfian theory. It seems to me that if NSM were right about there being a universal set of primitive terms that are constant across all of humanity and cultures, that can't be Sapir-Whorfianism, at least not in the normal understanding of that doctrine. In fact, perhaps the Isomorphism of NSMs is the very best evidence for the existence of an external world. . . one matching the way the primitive terms of the universal metalanguage claims it is organized. (Goddard 2002, p. 19) puts his view like this:

> From the NSM perspective, it would make sense to say that two cultures had fundamentally different conceptualisations [of time] if their languages differed in their stock of temporal primes. . . . Does the Hopi language, for example, have equivalents to the proposed NSM temporal primes, such as TIME/WHEN, BEFORE and AFTER (among others)? Contrary to the implication of Whorf's assertions, there is good evidence that this is in fact the case.

When asked, Goddard reiterated to me his "universalist" viewpoint about semantic primitives, and then asked what other evidence could be requested, concerning the existence of these basic items, than that they can be found in every language (or, at least, in all the ones thus far investigated)? And once one has granted "external existence" to the basic entities, then one needs special reasons for denying existence to other parts of the "external world". (Science, perception, etc., can provide evidence one way or another, he suggested). It thus seems to me that not only is NSM Universalist in semantics, but it also acknowledges that the primitive basis of NSM does limn reality.[2]

1.2. Moralism

Moral theorists know where their theories stop—that point beyond which "there is nothing that can be said". For them it would in fact be *immoral* to theorize beyond that point. In the present case, the point to stop is where the realm of language meets other realms—certainly where it meets the realm of "reality", and also where it meets the realm of conceptual framework.

1.2.1. Natural Language Metaphysics

Not everyone is so sanguine as Strawson about the legitimacy or even just the plausibility of inferring facts about reality from facts about language. Nor does everyone think that parts of *any* natural language can be used to give a non-question-begging description of the ultimate nature of reality in the way that Natural Semantic Metalanguage seems to desire, even in the case where the different languages give rise to isomorphic descriptions.

'Natural Language Metaphysics'—a phrase coined by Emmon Bach (Bach 1986a)—has as an end point to answer the question "What do people talk *as if* there is?". So to speak, this enterprise has the goal of describing what *seems* to be presupposed by the language one uses, but it does not attempt to go farther and attach this to any "metaphysical reality", nor does it claim that the *talks as if* can legitimately be the *only* evidence to be used to determine what occupies what *position in one's conceptual framework*. At the outset of Bach (1986a), he says:

> Metaphysics I take to be the study of how things are. It deals with questions like these:
>
> What is there?
> What kinds of things are there and how are they related?
>
> Weighty question, indeed, but no concern of mine as a linguist trying to understand natural language.

And at the end of that article he says, extending the modesty also to the conceptual realm (emphasis added):

> I've now said a little (but perhaps more than enough) about some of the kinds of things we seem to need in our ontology for English and a little bit (not near enough) about how we might get them into a semantics for English. It would be *immoral* of me as a linguist to make claims one way or the other about whether or not these sorts of things correspond to real things in the world, perceptual or conceptual categories that are independent of language, or to nothing at all.

And,

> Is there a natural language metaphysics? How could there not be? One of our main resources for coming to understand the world is, after all, language, a sort of tool box for doing whatever it is we want to do. Do the fundamental distinctions that are reflected in the overt and covert categories of natural language correspond in any way to the structure of the world? How could they not? But this is where linguistics stops.

Bach calls this a matter of morality. Others might think of it rather as a sign of modesty. (But of course, morality and modesty go together in various of the world's religions.) There are many writers of linguistic semantics who seem to take a similar view, distinguishing "semantic value" from "ontological entities". I discuss this topic further in Section 3.1.

1.2.2. Sapir-Whorfianism

I don't intend to enter the scholarly discussion concerning what the historical Sapir and historical Whorf *really* had in mind and meant to say when they came forth with such claims as Sapir (1929):

> Human beings do not live in the objective world alone, nor alone in the world of social activity as ordinarily understood, but are very much at the mercy of the particular language which has become the medium of expression for their society. It is quite an illusion to imagine that one adjusts to reality essentially without the use of language and that language is merely an incidental means of solving specific problems of communication or reflection. The fact of the matter is that the 'real world' is to a large extent unconsciously built up on the language habits of the group. No two languages are ever sufficiently similar to be considered as representing the same social reality. The worlds in which different societies live are distinct worlds, not merely the same world with different labels attached.

As well as Whorf (1940a):

> . . . users of markedly different grammars are pointed by their grammars toward different types of observations and different evaluations of externally similar acts of observation, and hence are not equivalent as observers but must arrive at somewhat different views of the world.

And Whorf (1940b):

> We are thus introduced to a new principle of relativity, which holds that all observers are not led by the same physical evidence to the same picture of the universe, unless their linguistic backgrounds are similar, or can in some way be calibrated.. . . The relativity of all conceptual systems, ours included, and their dependence upon language stand revealed.
>
> We dissect nature along lines laid down by our native languages. The categories and types that we isolate from the world of phenomena we do not find there because they stare every observer in the face; on the contrary, the world is presented in a kaleidoscopic flux of impressions which has to be organized by our minds—and this means largely by the linguistic systems in our minds.
>
> . . . no individual is free to describe nature with absolute impartiality but is constrained to certain modes of interpretation even while he thinks himself most free.

Rather than evaluating all interpretations of these rather dark remarks, it will be enough instead to take one of the many popular interpretations of Sapir-Whorfianism as our stalking-horse in the present discussion.

The popular understanding of ("strong"[3]) Sapir-Whorfianism is that the language one speaks constrains one to discuss "reality" in the terms given by the language, and not in the terms that would be more appropriate to the "reality" itself. It would follow from this that one could not speak of reality directly, because one's language would distort it in ways that a speaker was not in a position to recognize. Or if, *per* almost *impossible*, your language was miraculously the one language that accurately represented reality, you could never know this. Thus

any discussion of reality is in fact a discussion only of one's language—and there is no way to go on beyond that.

This version of Sapir-Whorfianism has obvious affinities with Natural Language Metaphysics, at least in terms of what modesty would dictate one should claim about reality.

1.3. Radical Postmodernism: Mad Dog Irrealism

When faced with the thought that there is no further evidence that could be brought to bear that would allow the inference from an adequate semantic theory to the metaphysics of the "real world", a current in the stream of thought of the last 40 years has been a variant of Postmodernism—to *deny* therefore that there is any "real world" to be sought. It is not a matter (as the Natural Language Metaphysicians might say) that we just cannot have any epistemic contact with it, but rather that it doesn't exist. Before one thinks of Logical Positivism and that this response is due to a failure of any possible verification, we should note that Postmodernists reject the principle of verifiability, and base their position on a different foundation.

Postmodernists are, generally speaking, social constructionists. A social construction is an artifact of some particular group, so that when something is said to be socially constructed, attention is focused on its "contingent existence on our social selves" rather than any inherent property or quality it possesses in itself. Socially constructed items do not exist "in the world" but only through the institutions that give them "meaning-in-a-culture". Various social constructivists take this beyond the realm of such (plausibly) social concepts like good/evil into all aspects of experience. Berger & Luckmann (1966) puts it that when people interact, they rely upon their "negotiated" common-sense knowledge, which comes to be seen as part of an objective reality, even though it is actually just "negotiated". And others, e.g., Latour (1987), continued this train of thought to include what science has claimed to be objective facts within the realm of socially constructed fabrications.

It is this more strident version of postmodernism that I call Radical Postmodernism, and the main tenet of this position that I wish to emphasize is what right-thinking people would call Mad Dog Irrealism. This Irrealist attitude is common in many areas of (post)modern thought, often linked to doctrines such as "there is no such thing as

'objective truth' " and "reality (or some specific area of reality) is a social construction". Of course, these asseverations often generate such rejoinders as "go ahead and jump out of your second-story window, if you think that". But we will not pause over this more general form of the doctrine, and instead restrict our attention to a way it has manifested itself with regards to language and linguistic investigation.

Despite the ubiquity of Postmodern Irrealism in current Humanities academia, this viewpoint is not very common in linguistics and formal semantics, to my knowledge. However, Dölling (1993) says things that sound like the doctrine[4]:

> . . . that the world which natural language is about must not be taken to involve structures independent of man. On the contrary, our world is linked to our cognitive capacity and does not exist in the absence of human creators. In this respect, the semantics has to consider a view of the world with conflicts with *naïve* common sense. (p. 134)

One should note that Mad Dog Irrealism is different from Natural Language Metaphysics. The latter view says that we should not move beyond the description of the semantic underpinnings of language to any claims concerning the nature of "reality". This view does not deny that there is a reality corresponding to the correct semantics of natural language, but only that linguistics is not how one would discover that. Irrealism, on the opposite hand, actively *denies* that there is any reality to be discovered.

I think that some features of language can be used to help construct an accurate evaluation of Mad Dog Irrealism, and the +MASS/+COUNT distinction may be one such area.

1.4. Summary: Universalism, Moralism, and Postmodernism

Universalists take the viewpoint that they can infer claims about "reality" and "conceptual structure" from facts of language. The two types of Universalists that we have looked at approach this somewhat differently, but they each are of the view the inference is justified because of a confluence of information from different sources. We saw that Strawsonian Descriptive Metaphysics thought that an analysis of "the way we think" (as revealed by a "conceptual analysis of ordinary language") gave credence to the belief that our conceptual framework had such-and-so features. But then again, Strawson's description of natural language itself showed that language required precisely the same features. The fact that the two different investigations gave rise to the same results—once in our conceptual scheme and again in our natural language—is most plausibly explained by saying that the external world is the constant force behind this.

Natural Semantic Metalanguage, on the other hand, takes the confluence of information to come from an analysis of the semantic metalanguages of a wide variety of natural languages. It is claimed to be an empirical finding that all these metalanguages are "isomorphic" to one another; and the most plausible explanation for this is that the languages are all shaped by the external world and its more-or-less uniform influence on people no matter where in the world they happen to be.

Moralism, though, takes the view that one cannot legitimately make the inference. Some Moralists, such as the version of Sapir-Whorfianism that we described, think that in fact the languages are all wildly different—that Natural Semantic Metalanguage's "Principle of Isomorphism" is simply false. Given that there is no such evidence as that presumed by NSM, it would indeed be too much of a hasty conclusion to assert that there is an external world that has such-and-so properties. Before one could do that, there would have to be some rationale for saying that one or another of the world's languages is the "ontologically perfect language". Furthermore, Sapir's and Whorf's own investigations of the differing societies of the speakers of these different languages convinced them that their "conceptual frameworks" were also radically different, and so we should make no inferences in that direction either.

The Natural Language Metaphysician, on the other hand, does not —or at least, need not—adopt the strong position of Sapir-Whorfianism that in fact all these languages are semantically different and describe different conceptual frameworks. Instead, such a theorist takes the point of view that "deep questions about ontology and conceptual structures" are not properly answered by seeing what sort of features best account for our *talk* of the world. Just because we talk *as if* time is

linearly ordered, is no proof that time *is* linearly ordered or that other cultures with different languages will conceptualize time that way. And the reason one should not make this inference in the case of time is the same as for *any* area of metaphysics and conceptual structure. The English language, and perhaps very many others, makes spatio-temporal individuals be the primary bearers of qualities. But even so, that shouldn't provide a justification to make the inference that there *are* such individuals in the world. To make such an inference would be *immoral* here, just as it would be in the case of Sapir-Whorfianism.

Finally, Postmodern Irrealism is generated from two sources: on the one hand there are certain things that have only what might be called "a social reality"— money, perhaps, or rape. While there are things "in physical reality" that are related to these—pieces of paper or metal with certain images and a certain provenance, or forcible sexual actions—the paper or actions wouldn't fall under the terms 'money' or 'rape' without some political agreement. This social reality is therefore not physical reality. On the second hand, descriptions of "physical reality" that have been made (in the past) have turned out to be incorrect. For some of these claims, it might seem plausible that they were made for social or political reasons. This in turn throws doubt on *any* claim about physical reality. So far this position seems only to justify moralism: one cannot tell whether there is any physical reality behind particular pieces of language. But Irrealists take one further step by claiming that language itself is inherently "social", and that therefore there isn't—cannot be—any physical reality (of the same sort) behind any particular aspect of language. Nor is there any universal conceptual structure; instead, any such structure is an artifact of one's society and culture.

2. MASS AND COUNT TERMS

2.1. Philosophy and the +MASS/+COUNT *Distinction*

We wish to evaluate the positions outlined above on the relations between language and reality as they apply to a particular phenomenon—the mass-count distinction. Now, before it is thought that this distinction is of very limited importance or interest to the various positions we have laid out and the scholars we have cited, let's consider some

of the claims made about the distinction by our various theorists, for they have pretty much all thought that the +MASS/+COUNT distinction was important, for one reason or another.

Firstly, there has long been an interest within philosophy about issues whose linguistic manifestation is in terms of a +MASS/+COUNT distinction. Philosophers from many areas within the field have found this distinction to be of interest—the metaphysical question of the primitive or primary existence of gunk vs. things is one obvious area, but also issues in the notions of identification and re-identification have been thought to be related to the distinction: is it the same building when all the concrete has been replaced with new concrete? been replaced with stone? with plastic? A statue can cease to exist without its constituent matter ceasing to exist. Does this mean there are two entities here: the statue and the parcel of matter? The part-whole relation seems particularly related to the +MASS/+COUNT distinction. Further afield, but still relevant, are questions about the referents of "abstract" mass terms, such as in '*Curiosity* is an admirable quality to have' and in '*This cat's curiosity* made it climb onto the counter.' The fact that 'knowledge' is a mass term while 'belief' is also a count term[5] have led some to question the account of knowledge as a justified true belief, or even that knowledge can be *any* species of belief. (Considerations of this nature can be found in Vendler (1967, 1972), although sometimes hidden in the terminology of 'event' vs. 'fact', and 'subjective' vs. 'objective').

Secondly, the specific philosophers mentioned in connection with the various viewpoints have all taken particular interest in the +MASS/+COUNT distinction. It was Strawson who first drew philosophical attention to the notion of "sortal terms"—"terms that provide a principle for distinguishing and counting individual particulars"—and distinguished them from both 'characterizing terms' (Verb Phrases and Adjectives) and from 'feature-placing terms'. This latter category of feature-placing terms are said to "provide a fundamental basis that is presupposed even by sortal predications." And he gives examples

(1) a. There is water here.
    b. Snow is falling.

It seems clear from his examples, both of the sortal terms (which "provide a principle for . . . counting") and of feature-placing terms ('water',

'snow', etc.), that, if he didn't have exactly the +MASS/+COUNT distinction in mind, he had some subset of the +COUNT terms in mind for the former vs. some subset of the +MASS terms in mind for the latter.

Little needs to be said to justify my view that Natural Semantic Metalanguage practitioners hold the +MASS/+COUNT distinction to be very important, since their writings make the distinction particularly prominent. Although one might radically disagree with the conclusions that Wierzbicka and Goddard reach in their discussion of these terms, it cannot be denied that they have made the distinction—particularly the +MASS side of the distinction—a highly visible pillar of their work. Consider, for example, Wierzbicka (1988a) "Oats and Wheat: Mass Nouns, Iconicity, and Human Categorization" and Goddard (2009) "A Piece of Cheese, A Grain of Sand: The Semantics of Mass Nouns and Unitizers".

I mentioned above that Emmon Bach introduced his notion of Natural Language Metaphysics in Bach (1986a). At about the same time, he published a piece (Bach 1986b), in which he begins with a statement about

> . . . the close parallels between the mass-count distinction in nominal systems and the aspectual classification of verbal expressions . . . . To take just one class of examples for now, there is a parallel between the two sets of distinctions in their cooccurrence patterns with expressions denoting numbers or amounts, as in . . . :
>
> (2) a. Much mud was in evidence.
> b. (*)Much dog was in evidence.
> . . .
>
> (3) a. John fell asleep three times during the night.
> b. (*)John slept three times last night.
> . . .
>
> The basic aim of this paper is to try to elucidate this proportion:
> Events:Processes :: Things:Stuff.

So we see that Natural Language Metaphysics has also had a strong interest in the +MASS/+COUNT distinction.

Whorf (1941) contained a substantial portion that discussed 'nouns of physical quantity', distinguishing how they are manifested in Standard Average European (the phrase Whorf used for the ways that Indo-European languages operated grammatically—which he thought were all basically the same) from how they are used in Hopi. He distinguished (pp. 140–141)

> . . . two kinds of nouns denoting physical things: individual nouns, and mass nouns, e.g., 'water, milk, wood, granite, sand, flour, meat.' Individual nouns denote bodies with definite outlines: 'a tree, a stick, a man, a hill.' Mass nouns denote homogeneous continua without implied boundaries. The distinction is marked by linguistic form; e.g., mass nouns lack plurals. . . . Hopi is again different. It has a formally distinguished class of nouns. But this class contains no formal subclass of mass nouns. All nouns have an individual sense and both singular and plural forms. Nouns translating most nearly our mass nouns still refer to vague bodies or vaguely bounded extents. . . . In specific statements, 'water' means one certain mass or quantify of water, not what we call "the substance water."

Whorf uses this sort of difference to argue for the superiority of Hopi, when it comes to mass nouns that "do not present themselves as unbounded extents" such as " 'butter, meat, cloth, iron, glass', and most materials."

2.2. A Basic Introduction to Mass/Count Terms in English

In English, mass nouns are those such as 'water', 'computer software', 'advice', and 'knowledge'. They are contrasted with count terms such as 'person', 'computer program', 'suggestion', and 'belief'. Intuitively, mass terms refer to "stuff" while count terms refer to "objects"—although the notions of 'stuff' and 'thing' apply perhaps only metaphorically to "abstract nouns" such as 'advice' and 'suggestion'. Since mass terms refer to stuff, they (but not count terms) allow for measurement: 'a liter of water', 'three CDs worth of computer software', 'too much advice', 'many books worth of deep knowledge'. Since count terms refer to

objects, they (but not mass terms) allow for counting, the use of individuating quantifiers, and "unitizing" with demonstratives: 'a person', 'three computer programs', 'each suggestion', 'that belief of his'.

The examples just given were of course from English. Not all languages follow English in their characterization of this distinction—indeed, perhaps no other language is quite like English, including even closely related languages such as German. As we will see below, even within the Indo-European language group, where this distinction most closely resembles that of English, there are relevant differences. And in the wider realm of the world's languages, there are those that do not allow plural/singular marking on individual nouns but only on larger phrases. There are languages that do not have a plural/singular marking for noun phrases at all (nor agreement with verb phrases); there are languages that do not have quantifiers that operate on nouns or noun phrases; there are languages that do not have determiners like 'a(n)' and 'the' even while marking singular/plural. Thus, the examples given in the previous paragraph—which make it seem that there are clear ways to distinguish count from mass nouns—do not have the same purchase (or perhaps no purchase at all) in these languages. And this can be seen as raising questions concerning the philosophical relevance of, or interest in the distinction. But for now we stick to English.

An unusual feature of discussions of mass/count, especially in discussions focused on English, is the fact that the distinction is usually introduced as a matter of the syntax (and morpho-syntax) of the language, but the discussion almost always turns immediately to matters of semantics. But in this turn to semantics, it is forgotten that the initial distinction was made syntactically and that the semantic features that are adduced do not mirror the syntactic distinction. We will look at this shortly.

2.3. Syntactic Theories of Mass Terms

Many descriptive grammars of English, e.g., Quirk et al. (1985), give a syntactic characterization of the +MASS/+COUNT distinction within the category of noun. That is, they view the fact that some noun (e.g., *water*) is a mass term as giving an explanation for why some combinations with other words are ungrammatical. For example, it is said:

(4) a. Mass nouns, unlike count nouns, do not have plural forms and thus all verb agreement is singular.[6]
b. Mass nouns, unlike count nouns, do not admit of numeral modifiers.
c. Mass nouns, unlike count nouns, do not allow "individuative" quantifiers such as *each, every, some* (stressed[7]), *few, several, many,* ...
d. Mass nouns, unlike singular count nouns, employ measurement terms such as *much, a lot of, (a) little*[8].

This syntactic characterization is supposed to account for the following classifications:

(5) Mass Nouns: *water, blood, cutlery, knowledge, carpeting, advice,* ...

(6) Count Nouns: *person, dog, spoon, belief, carpet, suggestion,* ...

These are all simple nouns viewed as being in the lexicon... *lexical nouns*, to give them a name. The +COUNT/+MASS features are viewed by Quirk et al. and others of this syntactic persuasion to be a part of the lexical characterization of the nouns. These features are to be inherited from the lexical items into the larger and larger syntactic units that are present in extended phrases. So, *blood* as a lexical entry contains the syntactic feature +MASS, and this is inherited by the common noun phrases *bright red blood* and *bright red blood that is on the floor* and the full determined phrase *the bright red blood that is on the floor*. The fact that this longer phrase is also +MASS is what ultimately explains why

(7) a. *The bright red blood that is on the floor are slippery
b. *Each bright red blood that is on the floor is slippery

is ungrammatical. (Because the fact that the phrase is +MASS prohibits it from being plural, as (4-a) says, and hence the agreement with the verb phrase does not happen as required in (7-a). And the subject term of (7-b) violates the condition on individuative quantifiers, as (4-c) says.) Violations of the constraints involving +MASS and +COUNT yield ungrammatical results that have the same status as other syntactic violations; (7-a) and (7-b) are no more a part of English than are

(8) a. *Dog the quickly
b. *A well depending that part thus join.

It might be noted that both of the mass and count categories contain terms that are "abstract": *knowledge* and *advice* are +MASS, while *belief* and *suggestion* are +COUNT. In Quirk et al., +ABSTRACT and –ABSTRACT are also seen as syntactic features. Other descriptive grammars might consider them semantic characterizations, that is, as descriptions of the sort of entities they describe or are true of.

In syntactic theories of +MASS/+COUNT, the lexicon supplies individual words with a set of syntactic features (and also, at least in the good syntactic theories, a set of semantic values that are relevant to these syntactic features). These syntactic features are passed up to more and more complex units that contain the lexical items (sometimes changing the values of the features). These larger and larger phrases that contain the lexical noun also contain the semantic information mentioned in the lexical items, modified in accordance with rules that describe the semantic effect of being syntactically combined in the manner that is employed.

For example, *boy* might be syntactically characterized as an N that is singular, masculine and +COUNT, with a semantic value of the set of all individual boys[9]; *smart* might be syntactically characterized as an adjective with a semantic value of being a function that selects the smart objects or stuff out of a given set of objects or heap of stuff. Then the complex phrase *smart boy* could be syntactically characterized as a CN that is singular, masculine and +COUNT, and its semantic value would be the set of all individual smart boys. If we now tried to add the determiner/quantifier *many* to this CN so as to form a full NP, we discover that it can't be done because *many* has a syntactic requirement that it requires a non-singular CN as an argument. And hence **many smart boy* is syntactically ill-formed (and the question of its semantic value doesn't even arise). However, using *the* to form the full NP instead *would be* syntactically appropriate and the semantic value of *the smart boy* would be the most salient smart boy in the relevant context.[10]

If there is no such item then the sentence in which this NP occurs is semantically anomalous or maybe false (depending on the theory), but it retains its syntactic good standing. In this general sort of view, the semantic value of complex terms (CNPs and NPs) that contain mass

or count nouns as parts are computed as some function of the semantic value of the embedded noun, the particular function depending on what the other parts of the complex are. Without involving ourselves in details of just exactly which functions are used for which syntactic combinations, we can give examples like: The semantic value of *dirty water* is describable as, or computed in accordance with, whatever the semantic value of *water* is, and whatever the semantic value of *dirty* is, when they are put together by the syntactic rule of an adjective modifying a noun to form a CN. This general account of how the syntactic well-formedness constraints work with the semantic values of syntactically simple pieces of language to construct the semantic values of the syntactically more complex items is called 'semantic compositionality', and is a touchstone for most modern semantic theories.

Quirk et al. (1985) said that "the distinction between +COUNT and +MASS[11] is fundamental to the English noun system and because of the nominal system's interaction with the verbal system, it finds important resonance throughout the language. As we have seen, the syntactic ramifications of +COUNT/+MASS are widespread: there are quantifiers, numerical modifiers, and measurement terms that are unique to mass, and there are some that are unique to count. There is singular vs. plural verb agreement in English. But in many other syntactic ways, plural count and (singular) mass pattern together. One of the most common mistakes that English as a second language learners make involves topics involved with mass and count nouns, such as choice of lexical items to be mass or count, whether to pluralize or not, what modifiers can be used, and so on. Quirk is right: +MASS vs. +COUNT is a very important syntactic distinction in English.

But as we will see, these syntactic features do not carry over well to other languages, nor do they carry over well to the semantic realm, as we will see in Section 2.5. Two more general problems about syntactic theories of +MASS/+COUNT terms are, first, that (almost?) every noun occurs naturally both as +COUNT and +MASS, so there is need of syntactic derivation rules to convert each noun from one to the other category—a terrible syntactic idea (or double entries for every lexical noun—another terrible syntactic idea), and second, that once this sort of conversion or double entry is adopted, then the +COUNT/+MASS features do no syntactic work: they never rule out any construction as

ungrammatical on their own. Instead, the noun just gets converted; or if this is not a possibility, then that impossibility is due to some other syntactic rule and the +COUNT/+MASS features themselves play no role. And the positing of syntactic features that never do any syntactic work seems yet again to be a terrible syntactic idea.

And on top of that, a purely syntactic theory would not give any insight into the philosophical and conceptual properties that are said to be of central interest. So let's turn to the semantic theories.

2.4. Semantic Theories of Mass Terms

Some descriptive grammars of English, e.g., Huddleston & Pullum (2002), think of the +MASS/+COUNT distinction as a description of the semantic properties of the denotation of the terms, instead of being a description of the morphosyntax of the terms. In this type of view, mass meanings contrast with count meanings in various ways. I collect here some suggestions in the literature, even though not all can be found in any one work:

(9) a. Mass meanings are *true of stuff*; count meanings are *true of things*
b. Mass meanings are *divisive in their reference*; count meanings are *true of a unit as a whole*
c. Mass meanings are *cumulative in their reference*; (singular) count meanings are *not true of groups of things which they are true of*
d. Stuff that mass meanings are true of *cannot be counted*; count meanings are true of *individuated items that can be counted*
e. Stuff that mass meanings are true of *can be measured*; (singular) count meanings are true of things that are *not measurable*

Some theorists take the divisiveness and the cumulativity conditions together to be called the *homogeneous in reference* condition.

The fundamental difference between mass and count terms evidently is that count terms are true of *objects*—entities that are distinct from each other even while being of the same type, and thus one can

distinguish and count them—while mass terms are true of *stuff* that is undifferentiated with respect to the term being used to describe it. This in turn explains why mass terms, unlike count terms, are *divisive* in their reference: they permit something that the mass term is true of to be arbitrarily subdivided and the term to be true of these parts as well. Taking the water in the glass to be something that *is water* is true of, it can be divided into parts and *is water* will be true of both parts. And again, mass terms, unlike count terms, are also *cumulative* in their reference: putting the water contained in two glasses into a bowl yields something of which *is water* is true. But the same is not the case with a count term like *dog*. Chopping up a dog does not yield more things of which *is a dog* is true, nor do two dogs make a thing of which *is a dog* is true.[12]

As discussed above for the syntactic version of +MASS/+COUNT, the lexicon supplies individual words with a set of syntactic features (and also, at least in the good syntactic theories, a set of semantic values that are relevant to these syntactic features). Larger and larger phrases that contain the noun get their syntactic properties (and also the computed semantic values) modified in accordance with rules that describe the semantic effect of being syntactically combined in the manner that is employed. But in a pure semantic theory (of +MASS/+COUNT), the features of +MASS and +COUNT are in fact descriptions of the type of "reality" being denoted. Thus they do not factor into any sort of syntactic well-formedness. Instead, sentences that violate the "appropriateness" of the semantic features of +MASS and +COUNT are seen as grammatical but not interpretable. So the sentence (10) would *not* be ungrammatical for using an "individuative quantifier" with a mass noun phrase—it would only be "uninterpretable", or "semantically anomalous". By themselves, the features do not rule out any construction as ungrammatical, even[13]

(10) Each bright red blood that is on the floor is slippery.

A major difference between +MASS/+COUNT as syntax and +MASS/+COUNT as semantics thus is whether these features are seen as syntactic well-formedness constraints that yield ungrammaticality when violated or as descriptions of the designata of the terms and hence as semantic interpretability constraints upon syntactically correct sentences that yield

semantic anomaly when violated.

2.5. Problems With Semantic Theories of Mass Terms

As we mentioned above, many words have both a natural mass and a natural count sense. So the basic lexical item that gets entered into a phrase structure description of a sentence will be one of these senses. It is not always clear how this is supposed to be effected in a grammar, but we will not pause over that here, and simply assume that there is some way that this can be done. But even if we can assume this, there nonetheless seem to be some serious difficulties that are semantic mirrors of similar difficulties to be found in the syntactic approach.

Many formal semanticists (e.g., Link 1983; Chierchia 1998b,a; Pelletier & Schubert 1989/2003) take the characteristics in (9) to be best accounted for in terms of a semi-lattice theory. A semi-lattice has no lowest elements and is atomless. The idea is that anything that *water*, for example, might be true of has subparts—things in the lattice that are its parts—of which *water* is true; and any two elements in the *water*-lattice find a joined element also in the lattice that represents the merge of those two elements.

But it should be noted that many mass terms obviously are not "atomless" in the sense required by this theory. Consider

(11) *furniture, cutlery, clothing, equipment, jewelry, crockery, silverware, footware, bedding, toast, stemware, gravel . . .*

Clearly there are atomic parts of these, and yet they are considered mass terms by any of the traditional grammars. So it cannot be an atomless mereology that accounts for the mass nature of these words; and by extension, since it doesn't account for the mass nature of these particular words, there seems to be no reason to think it accounts for the mass nature of *any* words.

Some theorists, e.g., Huddleston & Pullum (2002), take this as evidence that terms like those in (11) are of a different nature than what we have been calling 'mass terms', and are to be treated differently. Huddleston & Pullum call them 'aggregate terms' and semantically distinguish them from other mass terms by their being true of "very different sorts of things". The idea is that furniture, for example, is true

of sofas, chairs, tables, carpets, and so on, and that these are "very different" from one another. But a true mass term, for example 'blood', is really true only of one kind of thing.

But one might still wonder: are *any* words at all that obey the condition on divisiveness? Or put another way, are there really any words that are atomless—whose referent has no smallest parts? Doesn't *water*, for example, have smallest parts: H_2O molecules perhaps? A standard defense of the divisiveness condition in the face of these facts is to distinguish between "empirical facts" and "facts of language". It is an empirical fact that water has smallest parts, it is said, but English does not recognize this in its semantics: the word *water* presupposes infinite divisibility.

It is not clear that this is true, but if it is, the viewpoint suggests interesting questions about the notion of semantics. If *water* is divisive but water isn't, then water can't be the semantic value of *water* (can it?). In turn this suggests a notion of semantics that is divorced from "the world", and so semantics would not be a theory of the relation between language and the world. But it also would seem not to be a relation between language and what a speaker's mental understanding is, since pretty much everyone nowadays *believes* that water has smallest parts. Thus, the mental construct that in some way corresponds to the word *water* can't be the meaning of *water* either. This illustrates a kind of tension within "natural language metaphysics".[14]

Further problems with the semantic approach to the mass-count distinction come from the fact that there are pairs of words where one is mass and the other is count and yet the items in the world that they describe seem to have no obvious difference that would account for this. On the intuitive level, it seems that postulating a *semantic* difference should have some reflection in the items of reality that the terms designate. But this is just not true. There seems to be nothing in the *referent* of the following mass vs. count terms that would explain how they should be distinguished—as they intuitively are. (See McCawley 1975 for further examples).

(12) a. Concrete terms
   (i) baklava vs. brownies
   (ii) spaghetti vs. noodles
   (iii) garlic vs. onions

(iv) rice vs. beans

b. Abstract terms
   (i) success vs. failures
   (ii) knowledge vs. beliefs
   (iii) flu vs. colds

To many theorists, these examples and their surrounding facts have seemed to prove that the linguistic features of +COUNT and +MASS do not have any backing in reality. Nor any backing in people's intuitive understanding of *when* a word will be +MASS or +COUNT or *what it is* for a word to be +MASS or +COUNT.

2.6. Mass Terms in Languages of the World

Chierchia (2010) gives a very helpful three-way division of how various languages deal with the +MASS/+COUNT distinction. Without insisting on the exhaustivity of its classification, or even on the ultimate "truth" of its vision, we can nonetheless use the labels to give general characterizations. According to this division, the world's languages fall into one of the following three groups with regards to +MASS/+COUNT.

(1) Number marking languages, which have overt number features that obligatorily appear on nouns. Here the +MASS/+COUNT distinction applies to the nouns directly. (Most?) Indo-European languages, e.g., English, are such languages.

(2) Classifier languages, which do not have obligatory number marking on nouns (and arguably do not have a singular/plural contrast at all on nouns). Lexical nouns in such languages could be viewed as +MASS, although there is a +MASS/+COUNT distinction that is active more generally. (For this reason it might be better to view the lexical nouns as unspecified for +MASS/+COUNT). The classifiers in these languages enforce the +MASS/+COUNT distinction, but at the level of an entire "classified noun phrase". (Most?) Asian languages, even typologically unrelated ones such as Mandarin, Japanese, and Korean, are such languages.

(3) Languages lacking both obligatory number marking and obligatory classifier systems. Various Amerindian languages, e.g., the Canadian Dëne Sųłiné, various South American languages, e.g., the Brazilian Karitianan, and various Austronesian languages are such languages. Some of these languages can possibly be seen as having a +MASS/+COUNT distinction, albeit on somewhat different bases than the foregoing languages. But some of them just simply lack a +MASS/+COUNT distinction.

The Germanic and Romance languages are, like (modern) English, number marking languages. They have a +MASS/+COUNT distinction which characterizes lexical nouns. Nonetheless, the different languages seem always to have various differences in the specific nouns that are said to be mass and count. Here are a few examples from French, German, and Italian.

(13) French, German, Italian are +COUNT; English is +MASS

a. un meuble, ein Möbel, un mobile
all literally translate as: *a furniture* (in the singular)
'a piece of furniture, furniture'

b. un renseignement, ein Ratschlag, un consigilo
all literally translate as: *an information* (or as *an advice*) (singular)
'a piece of information/advice'

(14) German, Italian +COUNT, English +MASS

a. eine Nachricht, una notizia
literally translate as: *a news* (in the singular)
'a piece of news'

(15) French +COUNT, English +MASS

a. les pellicules
literally: *the films* (in the plural)
'dandruff'

(16) French +MASS, English +COUNT

a. la vaisselle
literally *dish* (as a mass term)
'dishes' (in the plural)

b. le contenu
literally *content* (as a mass term)
'contents' (in the plural)

Chierchia (1998a) mentions that, even though Italian matches English in having both a mass noun corresponding to *hair* (*capello*) and a count noun corresponding to *hairs* (*capelli*), in English one says

(17) a. I cut my hair
b. *I cut my hairs

while in Italian one says

(18) a. *Mi somo tagliato i capello
b. Mi somo tagliato i capelli

The Italian way to describe a haircut is also the German way.

(19) Ich schneide meine Haare.

It would seem that the same activity is described no matter where the barber is doing the work, so there can't really be anything in the choice of mass vs. count.

Moving yet slightly further from English, the Slavic languages also have a +MASS/+COUNT distinction that nonetheless differs sometimes from English, and sometimes from the just-surveyed languages.

(20) Russian +MASS, English +COUNT
a. klubnika
strawberry (as a mass term)
'strawberries' +COUNT(and +PLURAL)

(21) English and Russian +MASS; French, German, Italian +COUNT
a. mebel´
furniture (as a mass term)
'furniture' +MASS

As remarked above, the Chinese, Korean, and Japanese groupings

of languages are often argued *not* to make a +MASS/+COUNT distinction within the lexical noun. This is because, it is said, in these languages *no* noun can directly combine with numerals. Instead, a classifier—a word that indicates a way to "individuate" what is being discussed—is always needed. The classifier might designate a measure, or some container, or some shape (etc.) that the referent of the noun is to have. Many writers, e.g., Hansen (1976); Sharvy (1978); Krifka (1995); Chierchia (1998b,a), have concluded that the referent of the noun is therefore to be understood as "mass stuff", waiting to be "classified" into an object or a portion or some shape, etc. This is true for nouns such as 'man' as well as ones like 'water', so that one is required to say the equivalent of *three units of man*, just like *three glasses of water*. And hence, the meaning of all lexical nouns is +MASS. However, the work of Cheng & Sybesma (1999) and (Doetjes 1997, Chap. 7) has convinced many that the appropriate place to look for the +MASS/+COUNT distinction in these languages is the classifier system itself. Their view is that some Chinese lexical nouns *do* have an "inherent singularizing feature" and thus are semantically +COUNT. In such cases, Doetjes and Cheng & Sybesma say, even though the classifiers are required, these classifiers only give a "syntactic locus" to attach counting terms to nouns that already have such a meaning within themselves. The +MASS lexical items, on the other hand, do not have any inherent singularizing feature, and thus the classifiers relevant to them provide not only a syntactic locus for counting but also the very unit by which one is to count. And thus Chierchia (2010) now writes (as mentioned above) that although it is possible to view the lexical nouns as +MASS, "there is a +MASS/+COUNT distinction that is active more generally".

Other languages have fewer syntactic constructions that would give clues as to whether a noun +MASS or +COUNT. For instance Dëne Sųłiné lacks obligatory number marking and obligatory classifier usage (Wilhelm 2006a,b, 2008). A noun occurs with no marking and therefore it is "a matter of context" as to whether one item or several items, or perhaps just the 'stuff', is under discussion. And like many Athapaskan languages, there is also no nominal quantification that distinguishes (for example) *All X* from *Each X*—where in English we can use the former version to designate all water but the latter version only to designate each individual X. Thus, the sort of ways that one would distinguish

+MASS from +COUNT in English (and other Indo-European languages) is not available. And there are no obligatory classifiers that would work in the way that Chinese, Japanese, Korean, etc., get +MASS or +COUNT interpretations for entire noun phrases. For instance, the same sentence would be used to assert 'I cut one hair', 'I cut several hairs', and 'I cut hair'. Nonetheless, Dëne Sųłiné does have a prohibition against direct combination of a numeral with some nouns—requiring a classifier phrase for them in order to use a numeral—and this could form the basis for a (semantic) characterization of the +MASS/+COUNT distinction.[15]

In Karitiana (spoken in the Amazonian region), there is also no ±DEFINITE article or other marker making this distinction, nor any explicit singular/plural marking. Karitianan quantifiers seem to be adverbial rather than nominal: the expression which conveys universal quantification —*(ta)akatyym*—is composed of a third person anaphora (the prefix *-ta*), the verb 'to be' (*aka*) and the subordinate particle (*tyym*). So it more literally "signifies something like *those who are*" (as Müller et al. 2006, p.126 puts it). Nonetheless, like Dëne Sųłiné, there is a context that is appropriate for just some nouns: when using numerals with some nouns, one must use a classifier. One can say (22-b) but not (22-a), despite the fact that semantically all bare nouns are cumulative: if a *pikom* (monkey) is added to another *pikom*, the result is *pikom* in exactly the way that it happens with *ese* (water).

(22) a. *Jõnso nakaot sypomp ese
woman decl-bring two water
'The woman brought two waters'

b. Jõnso nakaot sypomp bytypip ese
woman decl-bring two bowl-in water
'The woman brought two bowls of water'

The conclusion is that in Karitiana some nouns are syntactically +MASS because of the interaction between the numerals and the classifiers. This is different from the Dëne Sųłiné case, where there is no interaction but rather the numeral modifiers just simply can't be applied to some lexical nouns.

But even these concessions to minimalist tests for +MASS seems absent from the language Yudja (spoken in the Amazonian region, Lima 2010). This language is also a bare-noun language (nouns can occur without articles or number inflection), and although +HUM nouns (but not others) can be pluralized, even this is optional. And when left off, a bare noun can be interpreted as either singular or plural. Lima gives examples such as

(23) ali ba'ï ixu
child paca to eat
'The/a/child(ren) eat(s)/is eating/are eating/ate the/a/some paca(s)

Furthermore, all nouns can be directly combined with numerals without the intervention of measure phrases or classifiers. Lima concludes that Chierchia's "signature property" is not exemplified in Yudja and therefore the +COUNT/+MASS distinction is not grammaticalized in Yudja at all.

3. MASS/COUNT AND METAPHYSICS: WHY WE SHOULD ALL BE MORAL

3.1. A Short Review: Semantics

Let's recapitulate. At various times I have alluded to three notions of "meaning" or "semantic content": (a) *Externalism*, which takes meaning and content to be an item or items in reality (taken broadly so as to include those who talk about possible worlds and varying situations), (b) *Internalism*, which takes it to be some mental item such as a prototype or concept (again taken broadly so as to include those who think of these sort of things as being socially defined and then residing perhaps subconsciously in the minds of individual members of the linguistic society), and (c) *Semanticism*, which holds that the notion of meaning/content is something to be defined entirely within language and is not identical either with speakers' mental economy nor with "the real world".

It should be emphasized that there is no incoherency in any one of these notions of meaning/content recognizing that there *exist* items in the other categories to be considered in an ontology. Rather, the view-

points merely insist that the correct account of meaning and semantic content is defined in their way. But there could easily exist other items; it's just that they aren't meaning/content. For example, an externalist would agree that there is a mental economy involving speakers (and communities of speakers); they just deny that this is meaning. Conversely, an internalist need not deny that there is a "reality"; rather, the claim is that this reality is not involved in meaning. And a semanticist needn't deny either the subjective or the objective; instead, this view merely says that the semantic content of language is not defined in these 'outside of language' ways.

Obviously, only our Universalists are in a position to adopt externalism—and even they need not do so. In fact, it is not so clear that either the Descriptive Metaphysicians or the Natural Semantic Metalinguists *do* take semantic content to be externalistic, as opposed to conceptual. Strawson's well-known Kantian views, as described in Strawson (1966), might make it seem that he adopts a Kantian-conceptual view instead. And since many of the NSM analyses discuss how speakers of different languages "conceptualize" the semantics being explicated by Wierzbicka and Goddard, it seems plausible that they too could be internalists, and view semantic content as being features of a universal "conceptual framework", and thus discussing 'conceptual frameworks' rather than features of 'reality'.

Internalism, the view that meaning/semantic content is some internal state of the speakers/hearers of a language, doesn't currently enjoy a very high position in the philosophical world. For one thing, it is difficult to see how mutual understanding can ever be guaranteed or even achieved with such a view. And for another thing, it is hard to see how any truth-conditional account could be involved in conjunction with internalism. Still, the position is quite popular outside philosophy, both in the general public and in accounts of meaning that are put forward in psychology. In our current discussion, we might identify the internalist notion of meaning with what we have been calling "the role in a conceptual framework".

Putting it this way makes Strawson's "conceptual framework" be internal meaning while his "linguistic framework" then seems to be a type of semanticism. His view is then that the fact that the two frameworks yield the same structures is a reason to believe in Universalism.

Much of the work in Natural Semantic Metalanguage could also be seen in this way.

In addition to the Natural Semantic Metalinguists, there have been various other researchers who have worked to describe the ("internalist") conditions under which people will understand structures in their languages. Even focussing just on the +MASS/+COUNT distinction, there have been many studies describing what types of features in the external world would cause an internal representation to be labeled as mass or count. For instance, Wisniewski (2009) reports on a number of experiments that demonstrate that speakers (of English) will take a newly-introduced novel expression to be +MASS, as opposed to +COUNT, if it is seen as characterizing entities that are "close together and hard to distinguish from one another" and which "we do not interact with the individual parts of".

This sort of study suggests that speakers of a given language, English for example, will all come to the same internalist categorization in the specified circumstances. And hence that, within speakers of a given language anyway, there is a kind of Universalism. But this conclusion is not really warranted, for as Wisniewski acknowledges, there is no universal agreement within the subjects tested (only some 70% obeyed these claims), and in any case, there are also terms that do not obey his postulated features at all and no speaker thinks they do. (Wisniewski mentions many, including *eyedrops*—as in a bottle that contains a liquid that one puts into one's eyes. Here we have plural agreement, and satisfaction of other tests of +COUNT even without the separation of the parts. And *toast*, which grammatically acts as a +MASS term despite the fact that, in each occasion of its use, the speaker is individualizing slices.) For these, Wisniewski agrees that the +MASS/+COUNT distinction is "opaque", and does not track his explanation of the internalistic conception of the stuff. Wisniewski's conclusion is that the +MASS/+COUNT distinction is "partially conceptual and partially opaque". —But then it isn't universal!

The version of Sapir-Whorfianism that I have been describing puts it into the Moralist camp. Arguing against this interpretation, however, is Sapir's (and Whorf's) well-known view that one's language will have some effect on one's conceptualizations. But I think that this effect is not to be counted as meaning. Sapir calls it "social reality" and

Whorf calls it a "conceptual system". As I see it, meaning for them is language-internal and has these extra-linguistic items as effects. Or at least, that's what I am calling Sapir-Whorfianism.

Semanticism—the view that semantics is completely defined by how aspects of grammar hang together, and is not about any conceptual or 'real' world—will hold that whatever turns out to be the most effective way to describe how meaning works in some language is all there is to be said about the 'content' of features of the language, for example, the content of +MASS and +COUNT terms in that language. The "meaning" of the feature +MASS is the theory that unites all the ways in common that describe how individual terms which are categorized as +MASS operate. And what way an individual +MASS term works in the language is to be investigated strictly intra-linguistically. One can see how this naturally comports with both Natural Language Metaphysics and with (my) Sapir-Whorfianism—for, according to these views, although one can describe one's language "semantically", any further inference to a "real world" is unjustified[16], or at least would need justification on some basis other than facts about how language works. Semanticism would also assert that, contrary to the claims of the Natural Semantic Metalinguists, one should *not* be surprised to find that *every* language you describe semantically ends up looking more-or-less "the same"—after all, you are using the semantic concepts from your own language. So this apparent sameness should *not* be seen as "empirical verification" of the universality of some external reality, as the Natural Semantic Metalinguists hold.

3.2. On Morality and Metaphysics

So, what does our discussion about the +MASS/+COUNT distinction imply about these three notions of meaning or semantic content and the legitimacy of making inferences from semantics to 'the real world'?

In discussing this, we will need to take into consideration the three viewpoints of Universalism, Moralism, and Irrealism and to try to characterize how they fit together with the three types of semantic theory. This means we will want to consider the various possible combinations of the following:

a) views of what meaning/semantic content is

b) views of how language relates to reality, and

c) facts about the mass-count distinction

Here are some of the relevant facts about mass-count:

1. The world's languages differ in that:
   (i) Only some languages, the number-marking ones, have +MASS/+COUNT nouns.
   (ii) Some languages, the classifier ones, do not syntactically mark nouns as +MASS/+COUNT, but only entire classified noun phrases.
   (iii) Some languages (e.g., Dëne Sųłiné) have *no* syntactic markers to distinguish +MASS from +COUNT, but instead allow the semantic values of nouns to dictate whether (e.g.) numerical modifiers can be applied.
   (iv) Some languages (e.g., Yudja) have absolutely no use of anything that can plausibly be associated with +MASS/+COUNT, whether syntactic or semantic.
2. Secondly, even *within* the closely-related Indo-European number-marking languages, a +MASS noun in one language is translationally equivalent to a +COUNT in another, as the examples (13)–(21) illustrate.
3. Thirdly, even within *one* language:
   (i) Terms that seem to be equivalent in all semantically relevant ways are such that one can be +COUNT while the other is +MASS, as illustrated by the examples in (12).
   (ii) And anyway, pretty much any term in a number-marking language can be used naturally in *both* a +MASS and a +COUNT way. For many of these +COUNT/+MASS pairs, there are well-defined types of relationships between their members, but there are also numerous pairs that do not have *any* of these wide-spread relationships.[17]
   (iii) Finally, there are the phenomena indicated by universal grinders and packagers.

Thus, if there is a meaning (of whatever sort) to be associated with the features +MASS and +COUNT, it can't be externalistic, for the factors just mentioned would then attribute contradictory properties to reality.

This seems to me to show that Universalism about mass-count is incorrect if it is taken as describing "reality". But there is also the type of Universalism that takes meaning to be internalist. Such a view

would hold that the conceptual schemes/ frameworks of all people—regardless of the language they speak—is the same (with respect to mass-count). Investigation by some psychologists into this issue as it is manifested within one language (as represented by the material cited above from Wisniewski 2009) does not make for a particularly convincing case in favor of Universalism of conceptual schemes: even within one language, speakers do not seem to be uniform in their conceptual preferences for employing +MASS and +COUNT. As remarked above, only some 70% agree in the experimental conditions investigated; and that seems like quite a far way from Universalism.

In addition, there are others, particularly those influenced by Sapir and Whorf, who have found Universalism about conceptual frameworks across languages to be particularly problematic. And while their work has not usually concerned the features of +MASS/ +COUNT, their considerations of other topics do seem to show at least a general implausibility to the idea of such Universalism of conceptual frameworks. These considerations brought forward by Sapir and Whorf and others influenced by them against the general case of Universalism of conceptual schemes, as well as the specific worries about "individual-entity-terms vs. substance-terms" that concerned Whorf (which we mentioned at the end of Section 2.1 above), seem to cast doubt on the likelihood of Universalism of internalism. In the case of the +MASS/+COUNT distinction, an appreciation of the radical differences in how it is manifested (or not) across languages seems to suggest strongly that there can't be universal commonalities in conceptual frameworks.

An early version of this style of critique can be found in Mei (1961). Although he officially claims only that the *semantics* of English vs. Chinese are different, and hence one can't infer anything about reality from semantics, it also can be seen as a critique of deriving *conceptual* facts from facts about language, at least about the +MASS/+COUNT realm. He attacked Strawson's Descriptive Metaphysics for its reliance on the analysis of but one language: English. The attack was made on the grounds that "Strawson exploits facts peculiar to languages like English. . . In Chinese, Strawson's criteria are inapplicable", and "[Strawson employs] Aristotelian arguments based upon the peculiarities of English and its relatives. . . . [Strawson's notion of] 'assertive ties', and subject-predicate 'congruence' only works for languages with sufficient

inflection." Mei concludes (p. 157)

> Strawson's silence [about other languages] can be interpreted in only two ways. He must either have thought that they conform to his criterion or that they are irrelevant. But the grammatical facts of Chinese do not conform to his criterion . . . . And to say that they are irrelevant is to claim that English is the paradigm of all languages. What justification can Strawson, or any of his colleagues, offer for this act of linguistic imperialism?

Strawson, and other proponents of Descriptive Metaphysics, did not choose to respond to these concerns.

Of course, these worries about cross-linguistic conceptual sameness/difference, which seem almost a priori, could be strengthened or dismissed on the basis of empirical evidence. . . although it is sometimes difficult to see how this could be empirically tested. The proponents of Natural Semantic Metalanguage claim that there is a common description of +MASS/+COUNT across languages. But despite the survey of languages to be found in Goddard & Wierzbicka (2002), and the specific analyses of the +MASS/+COUNT distinction given in other works (such as Wierzbicka 1988a; Goddard 2009), it is most unclear that this will carry over to the languages like Dëne Sųłiné, Karitiana, and Yudja. On the psychology side, Iwasaki et al. (2010) probed for differences in "conceptualization" between English speakers (where there is a +MASS/+COUNT distinction) and Japanese speakers (where the bare nouns do not exhibit +MASS/+COUNT, but the information is conveyed by the classifier system). Their results were that Japanese speakers were conceptually as sensitive to the +MASS/+COUNT distinction as English speakers, even though their language doesn't contain a morphological marking of the distinction on simple nouns. These results are suggestive of Universalism in conceptual framework (with regards to +MASS/+COUNT), but more cross-linguistic study is required.[18] Nonetheless, it seems to me that the balance of evidence (such as it is, including this empirical study and also the a priori considerations) makes Universalism of conceptual framework (with respect to +MASS/+COUNT) unlikely, and that other evidence needs to be amassed before it can be accepted.

The radical Postmodern Irrealism cannot, of course, embody exter-

nalism, since by its definition it is committed to denying the existence of an "external reality". It is most naturally taken to embrace some sort of internalism as its semantic theory, since the notion of "social construction" is what is seen as making all members of a given society agree about the force of socially constructed items. But in turn, this implies that Postmodern Irrealism cannot embrace Universalism of conceptual framework either—for, each social grouping is to create their own constructions. And while social construction theorists have not (to my knowledge) made any pronouncements about the +MASS/+COUNT distinction and whether it is one of the socially-constrained constructions, it seems likely that they would categorize it in this way. If so, then Postmodern Irrealism would seem to be committed to semanticism as its semantic theory: an analysis of (the semantics of) language cannot go beyond language, unless there are some other features brought to bear, such as an independent account of what items have been constructed and in which way. But this is not something that language itself can tell us.

In one respect, then, Postmodern Irrealists are in agreement with Moralists: one should not, and indeed, *cannot* in good conscience, make inferences from facts of language to conceptual features or to features of reality—at least, not without evidence that comes from sources other than language and linguistic analysis. But these Irrealists separate themselves from Moralists in not obeying this stricture, for they go on to draw the further conclusion that "there is no objective reality". Certainly this seems an incoherence in their position, and they would be better off—and still able to embrace many (all?) of their other doctrines—by adopting Moralism.

Moralism and semanticism seem to be natural bedfellows. Since a Moralist denies that the results of a linguistic analysis yield information about reality, s/he can't then think that meaning is externalistic. And similarly, since s/he denies that one can draw inferences about conceptual scheme from a semantic analysis, internalism about meaning is also ruled out.

So what overall conclusions should we draw about +MASS/+COUNT and its effect on our semantic theories and the three general attitudes?

(A) We have ruled out:

(i) Universalism with an externalistic semantics, because +MASS/+COUNT cannot be seen as universally describing an external world.

(ii) Universalism with a semanticism attitude, because that contradicts the basic tenet of Universalism.

(iii) Moralism with an externalistic semantics, because this contradicts the whole point of Moralism.

(iv) Moralism with an internalistic semantics, because it contradicts the whole point of Moralism.

(v) Irrealism with an externalistic semantics, because Irrealism denies an external world.

(vi) Irrealism with an internalistic semantics, because Irrealism believes that different social orders yield different social kinds.

(vii) Irrealism with a semanticism attitude, because semanticism prohibits an inference to *any* claim about reality, including its non-existence.

(B) We have cast doubt on

(i) Universalism with an internalistic semantics, because it just seems unlikely that speakers of different languages will all have the same conceptual schemes. But this is an empirical hypothesis, and might be susceptible to the sort of verification proposed by Natural Semantics Metalanguage theorists.

(C) Here, then, is what I think comprise the two main open possibilities (not taking seriously Universalism with an internalistic semantics):

(i) Moralism with a semanticist attitude. The idea is that +MASS/+COUNT has semantic reflexes, and is an important feature in describing the semantic properties of (at least some) languages. However, we cannot infer from this that there is any corresponding feature of reality nor that speakers of all languages will have such properties in mind whenever they employ such terms. To make these sorts of inferences involves investigations that are outside the realm

of "linguistic analysis" and into metaphysical or psychological/sociological studies about which it would be *immoral* for the linguists/semanticists/philosophers of language to tread.

(ii) Finally, we might wish to deny that +MASS/+COUNT is a basic or fundamental distinction of language at all, and hold that it does not form a part of the fundamental semantic basis of *any* language. Since it's not a part of the fundamental semantics, it neither describes any feature of reality or of the conceptual framework of any speakers. Rather, it is akin to grammatical gender: some languages have it, but (e.g.) German speakers do not think that *eine Brücke* is biologically feminine nor do Spanish speakers think that *un puente* is biologically masculine. Nor do these speakers conceptualize bridges as feminine or masculine.[19]

The two possibilities grouped under (C) have in common the proposition that the +MASS/+COUNT distinction in language should not be used to make claims about either the physical or the conceptual reality/importance of any possibly related distinction.

And that is what I believe. But let me be clear: I am also a believer in the importance of such philosophical distinctions as stuff vs. things. What I am denying is that the semantic analysis of language offers any insight at all into these features of reality and conceptual schemes.[20]

Notes

[1] See also their works Wierzbicka (1988b, 1996); Goddard & Wierzbicka (2002), and others. Of interest too is the special issue of *Theoretical Linguistics* **29** [2003], which used Durst (2003) as a target article about NSM and contained many responses.

[2] We discuss this issue again for NSM in Section 3.

[3] The strong/weak distinction in the context of Whorfianism was popularized by Penn (1972). Penn dismissed Whorfianism on various grounds, including the view that weak interpretations ("one's language affects one's thought") was too vapid to be interesting while the strong interpretation ("one's language determines one's thought") was too outrageous to be taken seriously.

[4] Dölling also says things that are more like Descriptive Metaphysics (a doctrine that he explicitly approves of on pp. 134-135), and he also takes a Kantian view of the matter when he says (p. 137) "... the world as experienced is not independent of the human mind. Instead ... this world has to be conceived of as the result of an interaction between environmental input and certain mental principles that impose structure on that input. More generally, in analogy to ideas of Kant, the ontology of the commonsense world is determined by a 'categorial framework' with is a part of the genetic inheritance of human beings and, as such, universal." Despite these similarities to Descriptive Metaphysics, I am using him as a linguist spokesman for Irrealism, in the absence of other clearer cases.

[5] Except possibly in certain postmodernist argot, the phrases ∗*a knowledge* and ∗knowledges seem particularly bad, while *a belief* and *beliefs* are unexceptional. However, *belief* can also be used in a mass way, as in *There is less belief in witches now than there was two centuries ago*. So the challenge is to show how *a* belief (an individual "object" that is designated by a count term) can become knowledge (since it can't become *a* knowledge.

[6] With some possible exceptions, such as *oats* and *smarts*. Two categories of nouns I'll not discuss in this paper are *collectives* and *pluralia tantum*. The former are singular count nouns that refer to multiple entities, and includes such terms as *team, committee, army, herd,* etc. The latter are inherently plural nouns that nonetheless sometimes seem to be like mass nouns. One subtype of this latter refers to "dual entities" and includes such terms as *scissors, earmuffs, pliers, binoculars,* etc. Another subtype is associated with co-occurring similar objects, and includes *suds, intestines, bleachers, ruins, remains*, etc. Yet a third subtype refers to groups of objects, and includes terms like *groceries, spoils, odds and ends, valuables, contents,* etc. Both the collectives and the pluralia tantum nouns challenge certain definitions of the +MASS/+COUNT distinction.

[7] The unreduced ("stressed") quantifier *some*, as in *Some student aced the exam*, is to be distinguished from the reduced or unstressed *some*, as in *John drank some water*. The literature usually spells this latter unstressed article 'sm'. In addition to its use with mass terms, *sm* can also be used with plural count nouns. It is rather more difficult to use the unreduced *some* with mass nouns, although it is perhaps used with an implicature of "but I don't know what (kind)", as in *Some gunfire woke me up*. [Thanks to Barbara Partee for this latter observation].

[8] *Little* and *a little* are measure terms, not size- (or importance-) indicating adjectives. (They contrast with *a lot of* rather than with *large*).

[9] The semantic value is only for the purposes of this example. I expand on the possible different types of semantic values below, in Section 3.1. But whatever the semantic value is, the more general point being made in the main text still holds.

[10] Again, the semantic value is just for expository purposes.

[11] Quirk et al. (1985), like many of the linguistically-oriented authors prefer the name –CNT —often with the idea that there are more types of non-count terms than the traditional 'mass' would suggest—but we will continue with the more philosophically usual name, +MASS.

[12] Other than in a Frankenstein-like scenario.

[13] This example might be ruled ungrammatical on other grounds, but not on the grounds of +MASS/+COUNT.

[14] For a description of, and defense of approaching metaphysics this way, see Bach (1986b,a).

[15] Wilhelm calls this a semantic characterization. It seems to be a syntactic characterization to Chierchia (2010), who calls this "the signature property" of mass nouns. Chierchia also suggests (p. 108fn8) that there may be many other languages, such as the Austronesian languages, that follow this pattern.

[16] Despite this natural position for Sapir-Whorfianism to take, Whorf himself thought that there was a definite metaphysical reality beyond one's language, and in fact he

thought that some languages approached it more accurately than others. For instance, in (Whorf 1941, 150ff) he expressed the view that the Hopi notion of time and event formed a better picture of reality than that of Standard Average European. But this aspect of Whorf's views is not a part of the view I have been calling Sapir-Whorfianism.

[17] For a summary of the well-established relationships, see Huddleston & Pullum 2002, pp. 336–337.

[18] And, one might doubt whether their specific example words—which were chosen from the food domain—differ *only* with regard to +MASS/+COUNT features. There might be some other feature(s) that are responsible for English and Japanese speakers to categorize the foods similarly. (Iwasaki et al. rule out visual similarity as a possibility, but there are other possibilities—for instance, 'often eaten together' or 'you have to peel them both', and so on).

[19] This sketch of a position takes the opposite point of view from Boroditsky et al. (2003), from which paper the example is taken.

[20] I very much need to thank Michael Glanzberg and Barbara Partee for their detailed comments on an earlier version of this paper. It is much the better for my changing it in some of the ways they suggested and dealing with some of the topics that worried them. It would probably be a lot better still, had I had the time and ability to deal with a number of other issues that they raised.

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