UNNATURAL KIND TERMS AND A THEORY OF THE LEXICON

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It is commonly taken for granted that the words in a language are, as a matter of linguistic convention, associated with meanings. This association is standardly represented in terms of functions from expressions of the language to the objects in the world, which the words (and compound expressions of the language) are claimed to denote. This article surveys the evidence that this common assumption is incorrect, and that much more often than is realized, the association is pragmatic rather than semantic, that is, a matter of inference rather than stipulation. Accepting this view requires abandoning the comfortable view of communication as the routine delivery of information safely packaged in linguistic expressions, in favor of a view whereby speaker and hearer must rely on assumptions about each other's goals and beliefs to reconstruct intended referents and predications from linguistic objects which function only as clues.

1. Introduction

It is commonly accepted that terms for natural kinds (i.e., biological species, naturally-occurring substances, and natural phenomena such as heat (but not sensations like pain)) are nondescriptional. That is to say, they lack any sort of Fregean sense, and instead rigidly designate the kinds they are used to refer to, as Kripke 1972 has argued proper names designate individuals. It is less commonly accepted that this analysis extends to the majority of common nouns, perhaps on the assumption that human beings recognize essential differences between natural and artificial kinds, and that these differences must therefore be reflected in language (Abbott 1989). Much of the literature discussing this issue does not say anything about states and events, but it is probably fair to interpret this silence as rejection of the position that adjectives and verbs might be nondescriptional, especially since many of the arguments for nondescriptionality do not extend to states and events.

For Kripke, Putnam, and Abbott, it appears to be critical that the things that nouns are the names of be antecedently existing natural kinds, with 'essences'. I argue below that language-users do not know which kinds of things are natural, and which are artificial, so whether the kinds have essences or are privately perceived (see Nunberg 1978a) is immaterial to whether the nouns used to invoke them are logically names.
Section 2 of this paper reviews the distinction between descriptional and nondescriptional accounts of the semantic contribution of kind terms. Section 2 details the rationale for a nondescriptional theory of kind terms generally as an alternative to the (traditional) descriptional account. Section 4 demonstrates how the relativity of ‘normal’ beliefs about the relation of a word and a class of referents and the arbitrariness of choosing a unique such relation as the basic ‘meaning’ of a word argues against adopting an account of how words contribute to reference that depends on lexically stipulated relations between words and particular kinds. Section 5 provides an account of how communication can be as possible and effortless as it is in the face of the conclusion that the connection between words and their intended referents is infinitely variable (and therefore not a matter of lexical stipulation). In Section 6, I examine Abbott’s arguments against treating artifact terms as nondescriptional, and then, in Section 7, I sketch an account for relevant phenomena which is based on a view of lexical semantics in which nondescriptional meaning is not limited to the small subset of nouns for natural kinds.

2. Descriptional vs. non-descriptional accounts

There is a certain ambiguity in the usage of the term natural kind term, with writers occasionally (cf. Abbott 1989:269) taking the Kripke-Putnam analysis of natural kind terms for granted and using natural kind term to denote the property of lacking a Fregean sense. Thus, they focus on the property of nondescriptionality, independently of any characterization of words which may or may not have this property. Other writers (Kripke 1972, Putnam 1975a, 1975b, Green 1983) use natural kind term and artifact term in their transparent, compositional senses, ‘term for natural kind’, ‘term for artifact’. This is how I will use these terms in this paper.

Most familiar accounts of the meaning of individual words are criterion-based (‘checklist’) descriptional accounts. This includes Aristotelian analyses, feature-based analyses like those of Katz & Fodor 1963 and Weinreich 1966, predicate-based lexical decomposition (McCawley 1968), Labor’s 1973 parameterized accounts, and translational accounts such as those of Wierzbicka 1972, 1980. Some prototype theories of meaning are criterion-based and descriptional. Descriptional accounts may be decompositional, spelling out the criteria for kind ‘membership’, or more attributive, doing no more than assigning kind membership to its referent. Thus, an attributive-descriptional account would say that, e.g., teapot means ‘is a teapot’.

According to descriptional accounts, the meaning of a word is a description that the (intended) referent satisfies. Saying that horse means ‘large, strong animal with four legs, solid hoofs, and flowing mane and tail, long ago domesticated for drawing or carrying loads, carrying riders, etc.’ (Webster’s New World Dictionary 1968:701) would be a descriptional account. Descriptional accounts describe facts about objects, and treat those facts as criterial for kind membership.

Where descriptional accounts treat the fact that horses are called horses as something that follows from the meaning of the word horse, non-descriptional ac-
counts treat it as a social fact, a fact about social custom in a linguistically homogeneous group: the term folks use to refer to horses is *horse*. I hasten to emphasize that this account is not equivalent to a criterion-based, descriptional account which gives *horse* a meaning, namely, ‘thing that is called a horse’.\(^5\) If names had meanings that amounted to ‘thing that is called by this name’, then true sentences like (1a) and (1b) would be contradictions.

(1) a. John Robert Ross is not called John Robert Ross.
    b. Haj Ross is not named Haj Ross.

It is no more defensible to claim that *horse* means ‘is called a horse’ than it is to claim that the name *John* means ‘is named John’. Both are just names that are associated, ultimately arbitrarily, with classes of individuals.

3. A nondescriptional account of kind terms generally

3.1 The problem of reference

As we shall see, Abbott’s arguments that artifact terms should be treated as descriptional depend on the assumption that the essential properties that define natural kinds are different in nature from the essential properties that define artifacts, and on the assumption that human beings are able to recognize these differences. An account of terms for kinds that does not distinguish between natural and artifactual kinds will naturally not require or allow any such distinction. An alternative to the notion that kind terms are semantically associated with properties or characterizations of their referents was outlined by Nunberg 1978a\(^6\) and approaches the domain that linguists have been accustomed to calling lexical semantics in terms of the problem of reference: How does a speaker’s use of a word enable that speaker to successfully refer to a particular object, class, or concept (i.e., have her intention to refer to it recognized as such, following the Gricean account of the nature of meaning (Grice 1957))? Under a descriptional account of reference, if successful reference is to be accomplished, when a speaker uses a term, the addressee must be able to tell what subset of experience the term is supposed to denote. Thus, minimally, the addressee must correctly identify the sense (or intension) of the term, and from the sense, locate its extension in the real (or other relevant) world.

3.2 The problem of polysemy

It is a commonplace observation that most words have more than one (apparent) sense. This is evident from a glance into any desk dictionary. Thus, my *New World Dictionary* indicates three senses for *lemon* (837):

1. a small, egg-shaped, edible citrus fruit with a pale-yellow rind and a juicy, sour pulp, rich in vitamin C. 2. the small, spiny, semitropical evergreen tree that it grows on. 3. [Slang], something or someone undesirable or inadequate.

and five for *gold*(621):
1. a heavy, yellow, metallic chemical element with a high degree of ductility and malleability: it is a precious metal and is used in the manufacture of coins, jewelry, alloys, etc.: symbol, Au; at. wt., 197.2; at. no., 79: abbreviated G., g. 2. gold coin; hence, 3. money: riches; wealth. 4. the bright yellow color of the metal. 5. something regarded as having any of the qualities of gold, as great value, luster, splendor, etc.: as, his voice is pure gold.

two for newspaper (988-9):

1. a publication regularly printed and distributed, usually daily or weekly, containing news, opinions, advertisements, and other items of general interest. 2. newsprint.

and five for steel (1427):

1. a hard, tough metal composed of iron alloyed with various small percentages of carbon ... 2. a particular kind of steel [depending on carbon content]. 3. a piece of steel; something made of steel; specifically, a) [Poetic] a sword or dagger. b) a piece of steel used with flint for making sparks. c) a steel strip used for stiffening, as in a corset. d) a roughened steel rod used as a knife sharpener. 4. Great strength or hardness: as, sinews of steel. 5. often in pl. the market price of shares in a steel-making company ...

This means that if words have descriptive meanings, then what they denote on an occasion of use is an exclusive disjunction of their descriptive senses. But the problem is more than the ambiguity that is inevitable if terms are descriptive and have a number of distinct senses. Massive ambiguity is merely computationally awkward. The problem is that the number of kinds distinguishable by human societies depends only on the human imagination, and consequently, there appears to be no limit to the number of possible kinds a term might name. Since languages tend to have a limited lexicon of basic, word-level expressions, there appears to be no principled limit to what, in context, a word may be rationally used to refer to. Thus, lemon can also be rationally and unremarkably used to refer to the wood of the lemon tree, as in (2a), to the flavor of the juice of the fruit (2b), to the oil from the peel of the fruit (2c), to an object which has the color of the fruit (2d), to something the size of the fruit (2e), and to a substance with the flavor of the fruit (2f). I stop here only because this example is getting boring.

(2) a. Lemon has an attractive grain, much finer than beech or cherry.
   b. I prefer the `74 because the `73 has a lemon aftertaste.
   c. Lemon will not penetrate as fast as linseed.
   d. The lemon is too stretchy, but the coral has a snap in it.
   e. Shape the dough into little lemons, and let rise.
   f. Two scoops of lemon, please, and one of Rocky Road.

Similarly, newspaper can be rationally and unremarkably used to refer to, among other things, the corporation which publishes a newspaper publication (3a), a copy of the publication (3b), an issue of the publication (3c), the building where the pub-
lication is manufactured (3d), the editorial staff which puts together the content of the publication (3e), and a representative of the corporation (e.g., a reporter) (3f).

(3)  
  a. The newspaper agreed to extend the contract another year.  
  b. Be careful not to spill your coffee on my newspaper.  
  c. Yesterday’s newspaper identified the gunman as Frank Tsem, but the editor promised to run a correction today.  
  d. There is a picket line outside the newspaper.  
  e. The newspaper criticized the state for being unresponsive to the needs of the people.  
  f. The newspaper missed her train, but will be here by noon.

The problem of polysemy is that it is in principle UNLIMITED. Suppose that artifact terms are descriptional. This entails that artifact terms have extensions that are strictly delimited in clearly expressible ways. Yet, as has been demonstrated (and could be demonstrated ad nauseam), words are typically used to denote an almost limitless variety of kinds of objects or functions: program unremarkably refers to a plan, a schedule, a curriculum or course of study, a set of courses, a list of instructions for a computational device, a written representation of any of these, a show broadcast on radio or TV, and potentially to a person responsible (in any relevant sense) for any of these.

(4)  
  a. The program of this group is to subvert the youth of America.  
  b. Their program calls for 10 pushups three times a day.  
  c. She entered the program in 1977.  
  d. We are expanding our program with the addition of two new faculty members, and six new courses.  
  e. The program would not execute.  
  f. The programs are all smudged.  
  g. If you have a VCR you can tape your programs while you are at work or asleep.  
  h. The program just called and said she would be late.

While an argument can perhaps be made7 that (4h) represents a metaphorical extension of the ‘sense’ of program, and should be accounted for by some special mechanism, no such claim is plausible for (4a-g). There are two options open to descriptionalists: either the meaning of any content word is vague enough to encompass all of its uses/senses — this has been the claim of Charles Ruhl for years (cf. Ruhl 1975, 1989)8 or there is massive, perhaps infinite, polysemy—as many different senses for program, pencil, horse (or whatever) as there are kinds that it would be rational to refer to as programs, pencils, etc. All-embracing vagueness, though minimally descriptional, requires essentially the same apparatus for explaining how reference can succeed as a general non-descriptive account does, so Occam’s razor dictates eliminating the minimally functional descriptional part. I am not supposing that speakers have conscious access to representations of the criteria that descriptional meanings would represent, or that descriptions cannot be vague. If the descriptions are not specific
enough to be distinct from each other, then descriptonal kind terms will have the same extension, and extensions will contribute nothing to our understanding of reference.

Now, we do not want or need to claim that as language-knowers we keep track of a large, possibly infinite, set of classes of objects (events, situations, relations, properties) that a word could ‘denote’ or be used to refer to. It is enough to know, Nunberg argues, that our knowledge of how to use language to refer includes the knowledge that if a term can be used to refer to some class $X$, then it can be used under conditions that he describes to refer to objects describable by a (recognizable) function on $X$. This principle can be invoked recursively, and applies to functions composed of other functions, and to expressions composed of other expressions, enabling diverse uses like those cited in (2) and (3) to be predicted in a principled manner.

Nunberg (1978a:1-28) presents cogent arguments against indefinite polysemy. If the descriptonal meaning of a word is a disjunction of senses, it must be an infinite disjunction. Infinite polysemy would be tractable if it were describable in terms of recursive rules to generate senses from (senses derived from) basic senses. I believe that this is what George Lakoff’s 1986 radial approach amounts to, and it is the obvious approach to take if you are committed to the idea that each word in a language is associated with a limited number of meanings as a matter of simple, stipulative fact — as part of the arbitrary conventions that distinguish one language from another. The problem is that it requires basic meanings, and there are two obstacles to accepting that assumption. The first obstacle is that while it is sometimes not too hard to identify word-to-referent relations that are normal in a context, ‘normal’ represents a social fact about language use, not an arbitrary lexical property of a word. The beliefs that are normal within a community are those that ‘constitute the background against which all utterances in that community are rationally made’ (Nunberg (1978a:94-5)). What it is normal to use tack or host or rock or metal to refer to varies with the community. These are social facts, facts about societies, and only incidentally and contingently and secondarily facts about words. More important, they are facts about what speakers believe other speakers believe about conventions for using words.

Thus, it is normal among field archaeologists to use mesh bound in frames to sift through excavated matter for remnants of material culture, and it is normally believed among them that this is normal, and that it is normal to refer to the sieves as screens. Likewise, among users of personal computers, it is normally believed that the contents of a data file may be inspected by projecting representations of portions of them on an electronic display tube of some sort, and it is normally believed that this belief is normally held, and that it is normal to refer to the display tube as a screen. Whether screen is (intended to be) understood as (normally) referring to a sort of sieve or to a video display depends on assumptions made by speaker and hearer about the assumptions each makes about the other’s beliefs, including beliefs about what is normal in a situation of the sort being described, and about what sort of situation (each believes the other believes) is being dis-
cussed at the moment of utterance. This is what is irreducibly social about language use and word meaning.

Nunberg notes a certain social character even in the case of the most unremarkable referents for ordinary terms since, as he remarks, it is plausible to assume that each speaker internalizes the same meaning ‘not simply because phenomenological considerations force on him a single characterization of the designated category, but because he assumes these same phenomenological considerations affect other speakers just as they do him’ (Nunberg 1978a:87). Naturally, I am uncomfortable calling such sorts of facts ‘meaning’ and am inclined to say that words do not have meanings, if by meaning is intended a function from words to objects in the world, unmediated by beliefs about users of those words.

The claim that knowledge of how words are used to refer is partly social knowledge (knowledge about social groups) does not entail (despite Putnam’s (1975b:227) sensationalism) that “meanings” just ain’t in the head, as long as meanings is understood as referring to beliefs according to which words are used to refer. Of course they are ‘in the head’. How could they be utilized in reference if they were not?

4. Contextuality — the relativity of normal beliefs

People often perceive the fact that the use of words to refer to things is dependent on users’ beliefs about each other’s beliefs as inconvenient, and try to circumnavigate it by articulating a theory of meaning that is independent of particular contexts in that it refers to a so-called null context, where speaker and hearer make no assumptions about each other. In fact, however, there are no such null contexts in which utterances could be interpreted. When we are asked to act as informants, and make judgements about expressions or their meanings ‘out of context’ or ‘in a null context’, we cannot help but imagine some context consisting of a speaker directing that expression as or in an utterance to some audience. We differ, as individuals, and on occasions, in how much context we import into the judgement task, and in what we are willing to imagine when we try to construe the expression as a sensible thing to utter on an occasion of the sort we assume. Consequently, if we abstract away from systems of normal beliefs that inhere in all the various possible groups of users of a language (say, English), we do not arrive at anything that looks much like what we imagine for a notion of either ‘normal English user’ or ‘normal English’. The usage of such a ‘normal user’, depending on whether we abstracted by intersecting or unioning memberships, would either be that of a person who belonged to no subgroups within the English-speaking world (imagine it — a person with no family, no country, no religion, no occupation, no avocations, no ethnic background — it would be the epitome of a social misfit, and we would be saying it represented a normal user), or it would be a person who was a member of every subgroup (a Welsh Kikuyu Catholic Jewish evangelical Christian Muslim Hindu (etc.) needleworker professor literary critic computer hacker multi-sport athlete insurance salesman) and his usage would reflect the sum of all possible usages, and the problem of unlimited polysemy would be staring us in the face again.
The second obstacle is that often there is no principled basis for identifying one ‘sense’ as more basic or normal than another. For example, as Nunberg (1978a:63-7) has argued, there is no way to decide whether the basic sense of *window* denotes a kind of hole in a wall, or the framed apparatus that goes in the hole (this is what window salesmen sell), or the usually transparent material that is part of that apparatus (the part you refer to when you say that someone’s home run broke a window). Does *newspaper* denote a token of a kind of regularly published document, or one of the types to which such a token belongs? In general, it is not obvious whether the count sense or the mass sense of terms like *fire* or *night* is best treated as the basic sense. Indeed, it is not even evident whether the type use of common count nouns like *cat* is more basic than the token use, or vice versa.\(^13\)

Nunberg’s solution\(^14\) (or my interpretation of it) to the problem posed by the relativity of ‘normal’ reference and the arbitrariness of determining a normal referent in contexts where assumptions about normal states and beliefs do not affect the determination is to say that if you treat relations among referential possibilities as relations between uses, not relations between senses, then there is no need to identify a central, basic sense or use, as long as the speaker judges accurately what is a normal use in that context, (i.e., what the ‘local’ name for that class, situation, property or whatever is), and as long as any referring function that relates the intended referent to the ostensible referent is sufficiently salient from the context, however defined. Nunberg 1978a elaborates on both of these criteria in some detail. The bottom line is that the contribution of individual kind terms to sentence semantics is treated as a matter of reference, something ultimately indexical. Thus there is no need to make any distinction between natural kind terms and artifact terms. Kind terms are just names for kinds, and as with proper names, it does not make sense to talk about their meaning. As I have argued elsewhere (Green 1983:6-7, Green 1996b), natural kind terms are essential to compositional semantics in the same way as proper nouns and indexical expressions like pronouns; they can be used to refer, to point to a particular individual or kind. But it is just as nonsensical to give a semantic analysis of the word *raccoon* or *pencil* as it would be to do it for *Fred* or *Pontiac*. Inferences, including inferences of set relations, may be derivable from the use of the term, but they are inferences about the sets, not about the words. As with names, there are no linguistic limits on what sorts of things kind terms can be used successfully to refer to. Kind terms, in this account, are words that name kinds of entities, properties or actions, and include most common nouns, most verbs that take concrete arguments, most prepositions, and many adjectives, but I will only be concerned here with terms for kinds of objects.

A nondescriptive account of kind-term meaning amounts to the fact that if terms like *gorilla* mean anything at all, it is just ‘is a gorilla’ or ‘belongs to a category sometimes called ‘gorilla’, but it does not say what it means to be a gorilla. A language user could go her whole life without ever considering the question, blithely carrying on conversations about flesh-and-blood gorillas, two- and three-
dimensional images of gorillas, gorilla embryos, gorilla fur, gorilla meat, and large, very intimidating human beings.

5. **The achievement of reference**

The theory of how words with such an impoverished sort of semantics can be used to refer relatively effectively to only a subset of referents from among all the classes of possible referents depends on a somewhat less impoverished account of the social nature of ‘word meaning’: knowing what a person means to refer to when she uses a word involves a Gricean regressus. It would not be enough to know ‘what a word means’ since any word can be used without anomaly to refer to so many different sorts of things. Nor is it enough to know that people (or certain people, namely those we are talking with) are disposed to use certain terms with certain classes of referents in mind, because, if we have accurate knowledge of their disposition, that will not guarantee a unique class of possible referents in a context either. We have to say, as Nunberg does, that on an occasion of use, when someone predicates some property p of some class described as q, we guess at what (our interlocutor thinks we will guess15) he means to refer to by q when he is speaking to us about it having property p. That we guess with a fair degree of accuracy is testimony to our sensitivity, but we guess wrong occasionally, and surely more often than we realize. In general, we do not recognize how often we mistakenly attribute our own beliefs to other people, and how often we consequently misinterpret what they say. This fact follows from the universal belief that people are rational — i.e., act purposefully, together with the (universal?) belief that in the absence of specific reason to believe otherwise, other members of our species are just like us.

In addition to assumptions about what uses are normal in which contexts, speakers have access to a number of **referring functions** (strictly: partial functions) of the sort mentioned above, such as ‘type of’, ‘token of’, ‘possessor of’, ‘location of’, ‘work of’, and to a (presumably infinite) number of composites of these functions (e.g., ‘location of possessor of’, as in Chicago beat Dallas, 44-0). These simple and composite functions relate classes of potential referents, and they can do this even when reference is indicated ostensively — by pointing — rather than by the employment of linguistic expressions. Thus, a truck farmer could point to a bowl of creamed spinach, or a picture of a spinach salad to answer the question, ‘What are you going to plant on the north forty next spring?’ He does not communicate that he is going to plant bowls of creamed spinach, or photographs of spinach, or cooked or cut spinach, but forms of spinach suitable for planting (seeds or seedlings), by virtue of a referring function like ‘source of’ or ‘source of image of’. Referring functions enable speakers to use terms to denote several kinds simultaneously, as in a sentence like (5), where being herbivorous is predicated of a species, but tipping over the garbage is predicated of a few unspecified individuals.

(5) Raccoons, which are herbivorous, tipped over our garbage can last night.
In the following excerpt from Barbara Tuchman’s *The Guns of August*, implicit and explicit references to Belgium denote successively a place, a nation or people, and a government (Tuchman 1962:135).

Belgium, where [place] there occurred one of the rare appearances of the hero in history was lifted above herself [nation, people] by the uncomplicated conscience of her [nation, people] King and, faced with the choice to acquiesce or resist, took less than three hours to make her [government] decision, knowing it might be mortal.

Assuming that normal beliefs license uses which we may call normal within a speech community is not tantamount to assuming a core meaning or extension, for two reasons. First, a normal use is just a use that is rational (i.e., reasonable to expect to be correctly interpreted directly) given normal beliefs. Consequently, a single term (like cat) may have several normal uses (e.g., ‘type’, ‘token’) within a single homogeneous speech community. They can all be normal, and none of them needs to be more core or basic than any others. Normal uses serve the same grounding function for reference transfer/sense extending that people assume basic senses serve, but it is not necessary to posit ‘basic meanings’ for this purpose to be served.

This leaves us with a picture in which a word can be used to refer to anything which can be related by one of these functions, or a composite of them, to something normally named by that word in some (sub)community. This amounts to saying that a particular word might be used to refer to almost anything at all. Supposing that there are a finite number of basic relations (even a smallish number, like 100 or 1000), the fact that referring functions can be composed of these (recursively) means that an unlimited number of things can be referred to. Strictly speaking, it does not follow from the fact that there is no mathematical limit to the things you could use that word to refer to, that you could use any word to refer to anything at all, but the spirit of the Humpty-Dumpty problem\textsuperscript{16} – whether a word can mean whatever a speaker arbitrarily intends it to mean – persists in either case. Nevertheless, the view presented here is not as anarchic or Humpty-Dumptian as it sounds, because rationality severely limits what a speaker is likely to use a term to refer to in a given context. By this I mean only that people assume that people’s actions are goal-directed, so that any act will be assumed to have been performed for a reason. This is a universal normal belief in Nunberg’s terminology — everyone believes it and believes that everyone believes it (cf. Green 1993). The consequence of this for communicative acts is that people intend and expect that interpreters will attribute particular intentions to them, so consideration of just what intention will be attributed to speech actions must enter into rational utterance planning (cf. Green 1993, also Sperber & Wilson 1986). This is the Gricean foundation of this theory (cf. also Neale 1992). In the context of word usage, when a speaker rationally uses a word \( w \) to refer to some intended referent \( A \), she must assume that the addressee will consider it rational to use \( w \) to refer to \( A \) in that context. She must assume that if she and her addressee do not in fact have the same assumptions about what beliefs are normal in the community-

at-large, and in every relevant subgroup, at least the addressee will be able to infer
what relevant beliefs the speaker imputes to the addressee, or expects the ad-
ressee to impute to the speaker, and so on, in order to infer the intended referent.

One might imagine simpler accounts than this. But by the time they are
fleshed out to accommodate the facts outlined above, it is not clear that they will
in fact be any simpler. Accounts that suppose a single common shared meaning
for each non-homophonous word in anticipation of adopting Nunbergian refer-
ring functions will still have to have a principled way of determining whether
type or token meanings, and mass or count meanings are more basic. Accounts
that suppose a single meaning for each term so vague that the distinction be-
tween mass and count, type and token does not arise must find some principled
way of predicting the regularity of mappings among uses on concrete occasions
that was sketched above. It is hard to see how functions could apply to some-
thing so vague and have this effect. Accounts that opt for polysemy will have to
come up with principled means for determining just what meanings each word in
‘the’ language ‘has’. It is not clear that this is possible. In practice, much as dic-
tionary makers may try to draw a line between metaphor and ‘meaning’ or to
characterize all of the unremarkable possible uses of words.¹⁷

No doubt I have made communication sound very difficult to effect, and
very fragile. I do not doubt that we are generally less successful at it than we
think we are, but in general, we are not conscious of the work that is required,
and I do not think it is all that fragile. Believing in the convenient fiction that
words ‘mean things’¹⁸ is what makes it seem effortless for us to use them to try to
communicate. If we were aware of how much interpretation we depended on
each other to do to understand us, we might hesitate to speak. The inferencing
that constructing or understanding an utterance requires (cf. Green 1982) is com-
parable to the inferencing we do in resolving structural or lexical ambiguity, or
inferring reference or conversational implicature, and indeed, involves the same
principles for inference. Fortunately for us, it is work we are not aware of doing.
For example, if we write something like Shape the mixture into walnuts in a meat-
ball recipe, we must be assuming that our readers will not consider it rational for
us to be referring to their making real walnuts by molding a mixture of ground
meat, egg, and cracker crumbs. If we attribute to the addressee as a normal belief
the assumption that uncooked meatballs are normally between, say, one-half inch
and two and a half inches in diameter, then it is rational for us to expect him to
find the referring function from an object to objects the size and/or shape of that
object salient enough to infer that by referring to walnuts in that context, we in-
tend to communicate that he should form meatballs the size he identifies with un-
shelled walnuts. And even if we attribute this belief incorrectly, we assume that
the addressee will be able to correctly identify the belief we incorrectly attributed
to him, and correctly identify the referring function ‘size of’.

Without the assumption that achieving reference requires inferences about
your interlocutor’s beliefs about your beliefs (etc.) about what beliefs and uses
are normal in the context, we would have a genuinely Humpty-Dumptian situa-
tion: people would consider it normal to use any word for any thing any time at
all. Everyone would always be in the position we find ourselves in when we try to interpret text like these paragraphs from an article in the *Chicago Tribune* written to illustrate all the different senses documented over the centuries for the word *shamble(s)*:

She rested her feet on a shamble. Then she went out shopping, first stopping to look at a shamble in a department store before going on to buy meat for dinner at a shambles. The meat had arrived that morning fresh from the shambles.

She bought a newspaper, which described the dreadful shambles after a battle in Bosnia. Then she returned home, found her dog had knocked over a vase, and thought, ‘What a shambles!’

Even if we know that *shamble(s)* might be used to refer to a footstool, a counter for displaying goods, a meat market, a slaughterhouse, a scene of carnage, or just any kind of mess, it is difficult to tell with any confidence which sense is intended for which use, and infuriating to discover that it changes with each use! This shows how dependent we are in normal situations on using assumptions about (the speaker’s assumptions about our assumptions about) the context to interpret what is meant by what is said.

When a speaker uses a kind term like *jazz* or *snow*, that term will be intended to rigidly designate whatever the speaker expects to be understood as intending to refer to, and it will be understood as rigidly designating whatever the hearer believes it was intended to be understood as referring to, that is, as invoking its name, or the name of the class to which it belongs, without characterizing it or its class. To say that a term designates rigidly is to claim that the term picks out the same referent in all worlds where that referent exists. So *horse* or *snow* or *jazz* refers to whatever in a world counts as a *horse*, *snow*, or *jazz in that world.* As long as terms are names which rigidly designate the kinds which are their intended referents, the criteria for being a horse, being snow, or being jazz do not enter into the designation relationship directly. Thus, in any world, *horses* can be used to refer to whatever entities in any world, people in some world, would call horses in that world, regardless of whether the counterparts of those entities in other worlds would be called horses in the other worlds. Thus, the size, scale, and uses of the animals are not the criteria which solely affect which ones can be successfully referred to as horses when or where; from our point of view (indexing speakers and referents to worlds), Ehippus is a horse, with respect to early Tertiary times, but not with respect to periods since the great ice age. From an Eocene point of view, horses are a lot bigger than they used to be.

Of course, not all words rigidly designate the entities they are used to refer to. For example, there are non-rigid designators like *pope*, which designates whoever is the titular head of the Roman Catholic Church at a contextually indicated time. In addition, I want to make it clear that I am not claiming that no words ever have descriptive meanings. Some words have, in additional to an unlimited number of uses related by referring functions to other uses, a sense which describes criteria for class membership just as a descriptive phrase like *gray sweater*
indicates a referent by limiting it to something which is gray and a sweater. For example, orphan indicates a child whose parents are dead, and kill refers to causing a change of state from alive to dead. The motivation for the claim that orphan is descriptive, but horse is not, is that a horse with three legs which is not used for carrying or drawing loads is still a horse, but an orphan whose parents are brought back to life is not an orphan anymore. Putnam’s (1962:65-70) ‘one-criterion’ words (like bachelor or renate (‘kidney-having’) or cordate (‘heart-having’) surely have descriptive senses, as do all the words that are inherently relational. Examples like kill and orphan are just the tip of the iceberg; Barker & Dowty 1993 discuss several classes of relational nouns, including boundary words like top, side, inside, outside, border, tip (but not iceberg), part-denoting words like hand, whisker, root, wheel, chapter, and terms referring to socially significant relations, such as friend, enemy, sister, citizen. Of course, some words, like not, every, if and and do not refer at all, and contribute to the semantics of an expression syncategorically, as operators, according to rules of combination. Still others (like heck, hello, um) do not even contribute to the truth conditions of an expression, but only to the pragmatics, the calculation of what is to be inferred from what was said. The question at hand is: to which category do terms for artifacts like pencil, pasta, and steel belong?

6. Some objections to treating artifact terms as nondescriptional

Three sorts of objections may be made (as for example, by Abbott 1989) to the claim that artifact terms are non-descriptional.

6.1 Objection 1: ‘Artifact terms describe function and external structure, because this is visible’

The first one is that, contrary to Putnam’s opinion, Putnamian Twin-Earth thought experiments 1) distinguish between natural and artifactual kinds, and 2) show that names for artifacts are descriptive. Abbott, for example, agrees with Putnam that entities that looked and acted like cats but were really robots would only count as robots, but reports the intuition that genetically reproduced organisms that could be exploited like pencils would just be pencils. (I think I would be inclined to say that they were fruits (or creatures) that are used like pencils. If Twin Earthlings call them pencils, that is mere coincidence, since on this history of Twin Earth, there are no artifactual pencils.)

Abbott (1989:281) speculates that external appearance and function are the denotation-determining criteria for artifactual kind terms:

Artifacts are typically made by humans and are categorized according to their purposes, so we know how they are shaped and what they are used for. When it comes time to name them we have the reference-determining properties there at hand, we know what we are talking about. It is only in the case of nature’s species that we have observable kinds whose real essence is mysterious, and so only in that case must we leave the reference-determining properties open.
Thus, the gist of this sort of argument seems to be: we cannot tell what the membership criteria are for biological kinds by direct inspection, so they cannot be part of the meaning of natural kind terms. We can tell what the criteria are for artifacts, so they must be part of the meaning of artifact terms.

There are several problems with the conclusion that function and external appearance determine the denotation of artifact terms, and with this sort of rationale for it. First of all, people’s knowledge of the appearance and function of potential referents of terms they use is independent of their linguistic knowledge of those terms. Following the external structure and function account, a person who does not know that a pearl is a natural object has an incorrect grammar, because he has the wrong sort of semantics for *pearl*, and his grammar should change when he discovers that pearls are not man-made like beads are. While not knowing whether something is man-made (or robot-made) and another is a product of nature may result in a foolish claim, it does not affect our ability to use words to refer. The position that the semantics of words for natural kinds is of a different sort from the semantics of words for artifactual kinds because natural kinds are different from artifacts entails that the words *rice* and *orzo* (a rice-shaped pasta) have different semantic relations to their referents, and that someone who does not know that orzo is manufactured (or that rice is a grain) has a different grammar from someone who is better informed. The word *pearl* would have to have a different kind of semantics depending on whether its intended referent is (assumed to be) natural or artificial. This alleged distinction does not seem to contribute anything to our understanding of words as they are used. If I tell you that I am looking for a yarn swift, your ability to tell that there is something I want, that I do not have, that is called a yarn swift, does not seem to be impaired by your not knowing whether yarn swifts are a natural kind or a kind of artifact, nor would it be significantly improved by your learning that *yarn swift* is a descriptive (or nondescriptive) term.

Second, external appearance is in fact a poor criterion for kind membership, for both natural and artifactual kinds. Whales and dolphins look like fish; bats look like birds; sharks, which are fish, look like dolphins. Indeed, the literature on the acquisition of kind terms indicates that children as young as three years of age ignore appearance when it conflicts with claims of category membership (Gelman & Markman 1987).

One can also take issue with the notion that artifact terms are defined by their exostructure, appearance and function. Yuppie catalogs of recent years display desk telephones that look like Mickey Mouse, like footballs, and like sneakers, so it cannot be their exostructure or appearance that identifies them as telephones. Often the way they work is disguised; the dials or keypads are not exposed, and the handset (what a peculiar term!) is just a detachable portion of the ‘sculpture’. Yet, it is enough for someone to tell you that one of these things is a telephone, for you to have a belief that you can use it for what you use telephones for. You do not have to believe it has a dial or a keypad or a handset to do this. It could be a speaker-phone; it could do speech-recognition dialing.
The purpose an artifact serves is no better a criterion for the extension of artifact terms. Cordless phones and cellular phones are telephones, but their function will not distinguish them from 2-way radios. Yet ordinary people consider them telephones, and maintain the same expectations about communications on cordless and cellular phones as about more conventional telephones, in spite of high court opinions to the contrary.

Finally, the assumption of descriptionality for artifact terms is inconsistent with the (Nunbergian) observations cited in section 3 that the reference of a term on an occasion of use is determined by (speakers’) beliefs about (others’) beliefs. Descriptionality entails either fixed references (basic meanings), or unbounded polysemy, or both, and we have reviewed the reasons for rejecting both.

6.2 Objection 2: ‘Multiple functions allow artifact terms to have multiple essences, unlike natural kind terms’

A second argument against analyzing artifact terms as being non-descriptive (cf. Abbott 1989:281-2) also seems to depend on the premise that if artifacts are different from natural kinds ‘in kind of essence’ (Abbott 1989:282), then artifact TERMS must be essentially different from natural kind TERMS. It assumes that the essential properties of artifacts do not involve internal structure, but rather function, and cites the existence of artifacts that can be used for multiple purposes, like a high-chair that folds down to a play table, or a cane that flips out to serve as a stool, as evidence that unlike natural kind terms, artifact terms are defined by the function of the artifact. However, it is not the case that a highchair/playtable just is a highchair when it is being used as one, and just is a playtable when it is used that way. It is always a dual-purpose object, even if it can only be used for one purpose at a time. Of course, there is a referring function that gives the illusion that these multiple purpose objects have multiple identifications or ‘essences’. This is the functional equivalence of particular classes of objects and other objects that serve the same relevant purpose. This function is commonly exploited in metaphors like those in (6), and even less remarkably used when we refer to these dual-purpose objects sometimes as highchairs or playtables simpliticier, and indeed, in sometimes classifying them for particular purposes as highchairs or as playtables.

(6) a. You can use a newspaper to keep your head dry when it sprinkles, but this sort of umbrella is no use in a Midwestern gully-washer.

b. In Dickens’ novel about the French Revolution, Mme. LaFarge knitted a catalogue of crimes against the people into the shawl she was making.

It must be clear that I am not committed to identifying (members of) natural or artificial kinds across or within worlds by reference to unrelativized essential properties. I am not certain whether others intend the expression essential properties referentially or attributively in discussing the views of Kripke and Putnam (cf. also Section 2, and Abbott 1989:287-8), but I have found no reason to believe that when speakers identify some individual as sufficiently like an X to be
called by the same name, that they all do it according to the same criteria (cf. also footnote 20 (Gould quote)). Thus, quibbling over whether exostructure and function are as essential for determining category membership is doubly beside the point.

6.3 Objection 3: ‘Children distinguish between artificial kinds and natural kinds’

A third argument raised by Abbott (1989:282-3) that artifact terms do not ‘express essential properties’ (277, 287-8) is that the work of Keil 1986 shows that by the age of 10, and often as early as 7, children treat manipulation of appearance as changing the category of manufactured objects (like birdfeeders or coffeepots), but not of natural kinds (like skunks and raccoons), although kindergarteners do not reliably make the distinction. In fact, this observation only shows that older children know that there is a difference between certain types of natural and unnatural KINDS, and can correctly categorize certain kinds. Indeed, further work by Springer & Keil 1989, 1991 shows that the chief conceptual division accessed by experiments of the sort Keil reports is not between natural kinds and artificial kinds, but between biological natural kinds, and everything else. As they put it, ‘...preschoolers consistently distinguish between heritable and non-heritable features, claiming that only features influencing parents’ biological functioning are passed on to offspring.’ Consequently, if we were to draw conclusions for natural language semantics from the controlled investigations of young children’s abilities to classify objects, we would have to say that the words skunk and raccoon (or flower and dog) are in one class, while water, pencil, and island are in the other. In any case, I see no reason to take Keil’s experiments as showing that the terms for the two sorts of kinds (whatever they may be) indicate their referents differently.

Throughout the arguments for a descriptonal account of artifact terms runs the assumption that there is a privileged and transparent relation between artifacts and the terms used to refer to them, that it is obvious what artifact terms are supposed to be terms for, or, if they are descriptonal, that it is obvious what they are supposed to describe. But the question, ‘Do artifact terms express essential properties?’ raises another question: properties of what? The very terms natural kind term and artifact term presuppose basic senses and basic extensions, i.e., they presuppose that there is some natural or artificial kind that that term refers to in a privileged way, so that lemon, by its nature24 refers to a fruit, not to a piece of candy or a poorly manufactured automobile. Yet, it is easily demonstrated (cf. also Sec. 4 above) that identifying ‘the basic sense’ of such a term is problematic, to put it mildly. To take another example, even if we agree that the Constitution is an artifact term, it is not evident whether it refers to a document signed at some point in history and perhaps amended many times since then, or to the laws that the signing (and amending) of that document enacted. With the assumption of descriptonal meaning, if it cannot be determined what a term denotes, then it is not possible to say whether terms for artifacts express essential properties of the objects they describe.
If it is assumed that the classification of referents as species occurring in nature or not is significant in determining the mode of referring of the term, such claims are false, because terms for both kinds of species are unremarkably used to refer to both kinds of objects. *Lemon* can refer to a natural tree, its natural fruit, or the natural flavor of the oil or juice of its fruit—or to the processed wood of the tree, or any manufactured object that resembles the fruit. (When *pine* refers to plywood or lumber, is it a natural kind term, or an artifact term? When *the governor’s office* is used to refer to the governor, is it an artifact term, or a natural kind term?) Is *coffee* a natural kind term or an artifact term? Insofar as the answer depends on whether the speaker intends to refer to a growing plant, its roasted fruit, or a beverage brewed from ground particles of the roasted fruit, then the classification of words into natural kind terms and artificial kind terms is at the very least, pointless.

7. A nondescriptive lexicon

What if kind terms generally (both so-called natural kind terms and so-called artifact terms) are nondescriptive names? We should no more expect terms to name unique kinds than we expect personal names to name unique individuals. I know lots of Susans and Bobs; maybe you know lots of Scotts and Jennifers. In 1989 there were two Jeff Georges in Champaign, and in 1990, two Keith Joneses in the NFL, two Eddie Johnsons in the NBA, and two Jennifer Coles and two Carol Tennys in linguistics. It is really quite unremarkable. But if we say that kind terms are names for kinds, parallel to personal names, we do not need to say that what kind they name is a semantic property of a lexical form (Green 1983, Kripke 1972). Lexical representations would detail underlying phonological forms, syntactic category, morphological irregularities, and subcategorization:

PHONOLOGY /lemon/
CATEGORY noun
PLURAL-MORPHOLOGY regular
SPR <(Det)> 

This is grammatical information. The fact that English speakers use *lemon* to refer to all sorts of kinds that are related directly or indirectly to the fruit of the *citrus limonum* is a cultural fact about language users, like the fact that there are social implications of using certain specific words in certain situations TO REFER TO THEIR NORMAL REFERENTS. Referring to a correctional institution as *the slammer* or *the joint* implies a certain familiarity that using *jail* or *prison* lacks; not saying *please* when making a request implicates a different kind of familiarity (Green 1990, 1992). But these are not facts about a semantic correspondence between the word and the world.

This means, to put it bluntly, that grammars do not associate denotata with words. Indeed, if kind terms are names for kinds, then since the kinds which a term can be taken to name are indefinitely variable, and in general, no single kind is logically prior to all others named by the same term, and the relation between a kind name and which kind it is intended to refer to on an occasion of use is a matter of inferring a speaker’s referential intentions, it is not sensible to say that the
mapping from words to kinds is a property of the individual words. Then how, one might ask, do we know what the words mean? First of all, this is the wrong question. To paraphrase a cliche, words do not mean things, people mean things. And everything follows from this. (This is not a new idea. It is Paul Grice’s story, and Geoff Nunberg’s, and in some ways, Sperber and Wilson’s. I am just retelling it.) As described in Section 2, when someone speaks, generally, and when she uses a certain word, in particular, we assume that she meant something by it. If we (presume that we) are the addressee, we presume that she believed we would know, or be able to figure out by virtue of our knowledge of what is normal in various contexts and of the sorts of referring functions available, what she intended us to understand by it. As long as she abides by this social contract and considers what we are likely to take a word to be-generally-taken-to-name-in-that-context, there will be no problem.

If all the classes of potential kinds of referents are not going to be enumerated (listed in lexical entries for words) or described via a descriptive meaning, how is the diversity of potential referenda to be accounted for? Probably a genuinely radical pragmaticist would derive part of speech as well as kind of intended referent from context and a theory of relevance (Grice 1975, Sperber & Wilson 1986, Green 1990), but it is hardly radical to propose that pragmatic competence includes knowledge of regular correlations between sorts of intended referents. The correlations that I am thinking of are not to be understood as lexical rules; they do not expand the lexicon, because, according to the view of lexical meaning I have sketched, information about properties of the referent (of a USE) of a term is not information that is in the lexicon, because it is information about the USE of a term. Such rules however, may entail shifts in syntactic properties, where those properties correspond to properties of referents. (This is a really thorny issue, broached in Nunberg 1993 with respect to deixis and indexicality.) Thus, in addition to rules like (7), which maps from count noun uses to count noun uses, there must be rules like (8), which map between the count and mass uses of a term.

(7) If a name can be rationally used to designate a product, it can be rationally used to designate the source of that product, and vice-versa.

<table>
<thead>
<tr>
<th>NATURAL KIND</th>
<th>PRODUCT</th>
<th>SOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>lemon [fruit]</td>
<td>lemon [tree]</td>
<td></td>
</tr>
<tr>
<td>newspaper [copy]</td>
<td>newspaper [corporation]</td>
<td></td>
</tr>
<tr>
<td>Picasso [print]</td>
<td>Picasso [artist]</td>
<td></td>
</tr>
</tbody>
</table>

(8) If a name can be rationally used to designate an individuated object, it can be rationally used to designate a substance derived from that object, and vice-versa.

<table>
<thead>
<tr>
<th>NATURAL KIND</th>
<th>OBJECT</th>
<th>SUBSTANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>pine [tree]</td>
<td>pine [lumber]</td>
<td></td>
</tr>
<tr>
<td>chicken [bird]</td>
<td>chicken [meat]</td>
<td></td>
</tr>
<tr>
<td>newspaper [copy]</td>
<td>newspaper [=newsprint]</td>
<td></td>
</tr>
<tr>
<td>marker [pen]</td>
<td>marker [ink]</td>
<td></td>
</tr>
<tr>
<td>Shakespeare [author]</td>
<td>Shakespeare [opus]</td>
<td></td>
</tr>
</tbody>
</table>
Rules like (8) are necessary because they interact with determiner selection; whether a noun subcategorizes for a determiner or for no determiner is a function of the type of the referent, whether it is a mass or an individuated object (cf. Wierzbicka 1988). Principles like (7) and (8) are parallel to the cognitive capacity for deferred reference, which we have seen to be not specifically linguistic (recall the discussion of deferred gestural reference to spinach seeds by pointing to an image of prepared spinach leaves in Sec. 5). At the same time, they seem to be at least partially independent of the rules for indexicals, which appear to be quite a bit more complicated (cf. Jackendoff 1992, Nunberg 1993).

There are also category-changing rules (apparently language-specific) like (9) and (10), which derive denominal verbs and deverbal nouns, respectively.

(9) If a word can be rationally used to designate an object or substance, it can be rationally used as a verb to designate a situation (event, process, or state) in which an object that can be rationally designated by that word plays a role. (Cf. Clark & Clark 1979)

<table>
<thead>
<tr>
<th>PROPER NAME</th>
<th>SITUATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>NATURAL KIND</td>
<td></td>
</tr>
<tr>
<td>milk</td>
<td>milk (a source)</td>
</tr>
<tr>
<td>elbow</td>
<td>elbow (a person)</td>
</tr>
<tr>
<td>water</td>
<td>water (drinks: plots of land)</td>
</tr>
<tr>
<td>ARTIFACT</td>
<td></td>
</tr>
<tr>
<td>trumpet</td>
<td>trumpet (a communication)</td>
</tr>
<tr>
<td>bread</td>
<td>bread (a portion of uncooked food)</td>
</tr>
<tr>
<td>bug</td>
<td>bug (a location)</td>
</tr>
</tbody>
</table>

(10) If a word can be used rationally as a verb to designate a situation-type, it can also be rationally used as a count noun to designate that situation-type.


Notice that rule (9) applies equally to proper names (cf. also Oliver North, George Bush, Dan Quayle), natural kind terms (cf. also sugar, lead, salt, pepper, hound, ape, parrot, eyeball), and artifact terms (cf. also ring, glue, saddle, lace), and that all such rules, but especially rules like (10) will be constrained in practice by familiarity with existent forms that are used to denote terms in the range of the function, according to now familiar ‘blocking’ principles (cf. McCawley 1978, Horn 1984, 1989).

Among the questions that have barely begun to be explored are ones concerning exactly how many of these rules a language or culture has, and exactly what their relation is to the referring functions, which being cognitive in nature are presumably the product of a universal capacity. Obviously, in other languages
or cultures, these rules might entail morphological embellishment that a morphologically underprivileged language like English does not have. Although the inventory of linguistically reflected referring functions is cross-linguistically quite robust (Nunberg 1978a), Jackendoff 1992 observes that some pairs of interpretations of nouns act differently from others with respect to binding phenomena, and Nunberg 1993 discusses a wealth of issues involving agreement and pronominal reference that arise from the possibility of both deferred reference and predicate transferral. It may be too early to say exactly what kinds of mappings exist between lexical rules and cognitive relations, how much is conventionalized from general, causal principles and how much redundancy an optimal model of our abilities encodes. These are questions we might not have been led to ask if we accepted the claim that only natural kind terms were non-descriptive.

My purpose has been to challenge the notion that terms for artifacts are different linguistically (semantically and pragmatically) from terms for natural kinds. I have argued that Nunberg’s arguments against polysemy taken together with his arguments against fixed basic meanings hold equally for the multiplicity of unremarkable uses for natural kind terms and artifact terms, and argue that both are linguistically no more analyzable than proper names.

NOTES

1 This work was supported in part by the Beckman Institute for Advanced Science and Technology at the University of Illinois at Urbana-Champaign. Portions of this paper were read at the 1992 meeting of the Michigan Linguistics Society, the Korean Workshop on Discourse and Pragmatics, the Sony Computer Science Laboratory in Tokyo, at Northwestern University, and at the Director’s Seminar at the Beckman Institute, University of Illinois. I have benefitted from the comments and questions of these audiences as well as from comments from Barbara Abbott, Jerry Morgan, Gregory Murphy, and Alessandro Zucchi on a previous draft. Naturally, none of them is to be held responsible for anything I say that they would wish to disclaim.

2 Perhaps as originally ostensively indicated — Abbott (1989: 286) rightly distinguishes commitment to the causal theory of reference from the phenomenon of nondescriptionality or rigid designation.

3 In taking the position that the generally accepted analysis of so-called natural kind terms does not extend to artifacts, which she describes as a conservative position, Abbott (1989:269, 271, 287) aligns herself with Kripke (1989:271), implying that Kripke would severely limit the assignment of nondescriptionality. However, she admits that ‘it is somewhat difficult to tell’ (Abbott 1989:270) [the extent, in Kripke’s view, of the nondescriptive class of words], and the passage she cites as ‘Kripke’s clearest statement’ (Abbott 1989:270) shows only that he is cautious, not that he is ‘conservative’(Kripke 1972:327):

...my argument implicitly concludes that certain general terms, those for natural kinds have a greater kinship with proper names than is
generally realized. This conclusion holds for certain for various species names, whether they are count nouns, such as ‘cat’, ‘tiger’, ‘chunk of gold’, or mass terms such as ‘gold’, ‘water’, ‘iron pyrites’. It also applies to certain terms for natural phenomena, such as ‘heat’, ‘light’, ‘sound’, ‘lightning’, and presumably, suitably elaborated, to corresponding adjectives — ‘hot’, ‘loud’, ‘red’.

Kripke does not say that other terms are not like proper nouns in the relevant respects.

4 Abbott considers this a nondescriptional account, saying that her account of natural kind terms as expressing the ‘essential properties’ of the kind (1989:277) is not descriptional in that the property expression it attributes to natural kind terms ‘is the minimal one of being of such-and-such a kind, e.g., being a tiger, or being gold, whatever that entails’ (1989:287-8 (fn. 6)).

5 Kripke (1972:284) rightly criticizes an account of this sort that he attributes to Kneale.

6 This section interprets and elaborates on arguments given originally in Nunberg 1978a.

7 The argument is not worth pursuing, however, insofar as it is impossible to draw a principled line between (poetic) metaphor and meaning (cf. Nunberg 1978b), without invoking the notion of novelty, which involves an evaluation (by the speaker) of evaluation by the hearer, and is thus a matter of language use, not of lexical meaning. I find compelling the arguments of Nunberg 1978a that the same principles account for both (poetic) metaphor and what many take to be ordinary polysemy.

8 Thus, he would derive all of the use possibilities of bear and hit (but not kick (Ruhl 1989:225)) from unique meanings, though he admits that he cannot represent those meanings (1989:63):

   So what does bear mean? It should be clear by now that this question cannot be answered in words; there is no single word or phrase that can comprehensively capture exactly what bear contributes.

9 Nunberg 1978a gives numerous examples of this.

10 I certainly would not want to say that a meaning is a function from a word to its denotation on an occasion of use, because that would conflate meaning and reference, and claim that, e.g., there was no difference between a ‘literal use’ like (i) and a metaphorical use like (ii).

   [i.] They waltzed through the room.
   [ii.] They waltzed through the calculus exam.


12 Or her, if you like; the mind boggles at imagining the sex and gender of such an individual.
This does not mean that only they are genuinely ambiguous. There is no empirical support for saying that window and fire are ambiguous because we cannot say that one use is more basic than all the others, but that lemon is vague because all the uses can be derived from a single salient use; ambiguity tests (Zwicky & Sadock 1975) treat both types as ambiguous, not vague. Example (i) cannot refer to a fruit in one clause and a piece of candy in the other, and (ii) cannot refer to an individuated fire in the first instance and the phenomenon fire in the second.

[i.] Kim bought a lemon and Sandy did too.
[ii.] Some fire is beneficial and some isn't.

This account is greatly abbreviated and somewhat oversimplified, of course. For fuller discussion the reader is referred to Nunberg 1978a and to the summary and commentary in Green 1996a.

The recursion goes as deep as necessary, but usually there is no need to go deeper than one or two cycles, if that many.

‘When I use a word,’ Humpty Dumpty said, in rather a scornful tone, ‘it means just what I choose it to mean – neither more nor less.’ (Carroll 1960:229).

Pilot studies of twenty or so 200-word passages of unremarkable prose show that from 8-29 percent of the nouns, verbs, and adjectives are used in ways not characterized by large desk dictionaries. Cf. also Nunberg 1978b.

What kind of things, I have always wondered. Cf. Austin 1963. There is a lot in this article that seems way ahead of its time (it was written in 1940) – e.g., characterization of what amounts to implicature, as distinct from implication; discussion of the consequences of regular polysemous usages (amounting to referring functions). Naturally, I reject Austin’s dismissal (1963:7) of the idea that it is reasonable to treat common nouns as names for kinds. Austin objected to this idea on the grounds that while proper names are names of real individuals, if the designatum of a common noun is considered to be a kind, it is not a real thing, because kinds are fictitious entities. Insofar as there are proper nouns for ‘fictitious individuals’ like Santa Claus and Satan, fictitiousness of the (intended) referent is not a distinctive property of common nouns. He also supposes that common nouns have connotation while proper nouns do not, and that this is also a good reason to reject the idea that common nouns might be logically names. If all the things that we believe to be (commonly believed to be) true of the individuals that we take proper names to denote amount to connotations, then having connotations or not does not distinguish between common and proper nouns either. That we can use proper nouns as common nouns as in sentences like (i) points to parallel modes of determining reference.

i. I’ll trade you three Jose Cansecos for a Bobby Bonilla.
ii. Even the casual visitor to the Windy City discovers that there are many Chicanos.
The fact that proper nouns can be used as verbs (to denote a characteristic property of the individual (normally taken to be) named by the noun, as in (iii) just as common nouns are (as in (iv)) corroborates this judgement.

iii. The strategy they adopted for the next four years was to Willie Horton their opponents into a defensive position.

iv. They trumpeted their discoveries from every pulpit available.

For more examples, see Section 7.

19 An enlightening discussion of this is to be found in Nunberg (1978a:81-6).

20 Pedants may object to my use of the name *Eohippus* for a species properly called *Hyracotherium* (Gould 1991:90), but as it would be genuinely pedantic for me to use that name when I have no confidence that it would be meaningful to more than a few readers, I use what we must perhaps now take to be the common name of this species. It is interesting that the usage of Gould (a paleontologist) is to use *Eohippus* when discussing older works that call the critter *Eohippus*, and *Hyracotherium* when discussing the beast itself.

21 Experts are not so certain that natural kinds are so observable. Cf. Gould (1985:93-4): ‘Nature, in some respects, comes to us as continua, not as discrete objects with clear boundaries. One of nature’s many continua extends from colonies at one end to organisms at the other. Even the basic terms — organism and colony — have no precise and unambiguous definitions. ... Some cases will be impossible to call — as a property of nature, not an imperfection of knowledge.’

22 Only the inventor of an artifact could be depended on to have this knowledge. If it is granted that the nature and status of terms in the language shared by members of the community therefore depends on the knowledge of a specific individual, advocates of descriptitional meaning for artifact terms must find their own stories to tell about the consequences of positing Putnamian experts: Putnam’s ‘division of linguistic labor’ entails that knowledge of language is societal, not individual, and contra Abbott (1988:286), requires commitment to a causal theory of reference.

23 Malt 1992 offers controlled demonstrations that function is not a reliable clue to category membership as reflected in referential practice.

24 To some extent, the research on categorization inspired by Rosch 1973 and Rosch et al. 1976 may provide a way of narrowing the likely domain of a term in uses presented out of context, since if a term (like *chair*) can be understood as the name of a basic level category, it will be natural to interpret it (out of context) as naming that basic-level category. However, this really provides very little help either in any particular circumstance, because language interpretation is not carried on out of context even in contrived experiments (cf. Sec. 3.3 above), or in general, because most terms (including *lemon* and *pencil*) do not name basic-level categories, and this principle gives us no guidance for them. Nunberg (1978a:29-47) gives some principles which not only cover a considerably broader domain, but are considerably more specific, and are framed under a set of assumptions.
which does not presuppose a privileged, linguistically specified denotation. My point here is simply that what class a term denotes is not a question that can be insightfully answered out of context by reference to arbitrary grammatical stipulations.

25 Of course, it is more complex than this. Often she must consider what I am likely to take her to assume I am likely to take it to (be taken to) name. In principle there is no limit to the depth of recursion here. See Nunberg 1978a:82-116. Green 1989:56-61.

26 See Russell 1993 for some details on how this would work.


REFERENCES


