Defining natural-kind words

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The class of words referring to natural-kind entities, as *dog, stone, oak* is very large. They are particularly interesting in that very often semanticists argue they are undefinable (cf. Wierzbicka 1980: 77—78; she changed her position in Wierzbicka 1985). As the dictionaries have to include and to define such words, the issue of definitions of natural-kind words seems to offer a good opportunity of reviewing some problems in lexicography. I will take the liberty of confining my paper to only one type of word referring to natural kinds, namely to those denoting living species (animals and plants). This limitation on the subject-matter of my paper will allow me to go into greater detail on some important points.

We can look at the problem of definitions of natural-kind words from three different angles: by comparing the types of definitions found in the history of lexicography, by discussing natural-kind words, and thus gaining insight into the internal coherence of dictionary-description, and by trying to find out what entries on natural-kind words are used for, we can draw conclusions on the functions of dictionaries themselves. Some of the findings will be summed up at the end of the paper.

When we look into the history of lexicography we can find roughly two traditions of descriptions of natural-kind words. One tradition can be called subjective, typical of pre-nineteenth century dictionaries. It is enough to recall here Johnson's famous definitions. The lexicographer's views and prejudices left an indelible stamp on those dictionaries. At present lexicographers are rather accustomed to think in terms of objective recording and description of the lexicon. This is the other tradition: the objective one. Present-day lexicographers closely follow the 19th century dictionary-makers in this respect, for it was in the 19th century that the ideal of an objective dictionary was established, and it has served as a model ever since. As far as definitions of natural kinds were concerned, objectivism in dictionaries meant that they should draw on the findings of the natural sciences.

Objective, taxonomic definitions

Let us compare some definitions in several dictionaries (see Appendix). They all, including OED, obviously have much in common. The following common elements could be distinguished: all definitions use the traditional Aristotelian model of the definition, and most of them have scientific terminology and Latin names.

Let us discuss the use of scientific terminology and Latin names in dictionary definitions. This sort of terminology reflects the findings of the biological sciences: the system of taxonomy. Generally lexicographers are said to aim for instant precision by using taxonomic descriptions (cf. Hanks 1979: 35). Presumably that precision has to do with denotation, i.e. they are to describe those features that some natural-kind entities share. But can taxonomy be useful in describing denotation?

It seems that the use of taxonomic information in dictionaries is based on some misunderstanding of what taxonomy is about. This problem has to be dealt with in more detail: what is taxonomy? Contrary to what dictionary definitions seem to imply, taxonomic classification is not a detailed and precised objective description of living species. (The following statements are based on Mayr 1969 and Campbell and Lack 1985.) Biologists define taxonomic classification as an expression of basic biological theories, and say that at present all such classifications attempt to reflect evolutionary histories of living forms. Taxonomy, then, reflects some notions of man's theories of evolution rather than the real world. It is possible that in future taxonomic classification will be based on studies of genetic structure in living species. An interesting question arises: will dictionaries include definitions describing the genetics of a living form?

One of the most important elements in a taxonomic definition is Latin names. In the definition of *dog* in CED the only words that say more precisely what a dog is are *canine* and *Canis familiaris*. In manuals of lexicography a recurrent motif is that the best way of identifying a living species is by using Latin technical names (cf. Zgusta 1971: 255 for a summary of views). Lexicographers seem to regard Latin names as often simple synonyms of vernacular words, very convenient because the provide a stable basis of comparison for all languages. But Latin names are not simple synonyms of vernacular words, and precisely for that reason biologists use them. Latin names refer to the position which those abstract entities − taxonomic units − have in the system of taxonomic classification. But it should be noted that the worst aspect of the system of taxonomic nomenclature is its extreme instability (Mayr 1969: 342−345). One of the results of this instability is synonymy of Latin names. *Domestic cat* has two Latin names, and only CED gives both (Appendix). But there are species which have more than two Latin names. Is the lexicographer supposed to list them all? As a result of this instability three post-war dictionaries of Polish have three Latin names of the bird 'swift' *jerzyk*: Cypselsus murarius, Micropodidae, Micropus. There is a fourth one used: Apus apus. Because of all these reasons taxonomic information in definitions cannot be seen as contributing to precision.

There are of course more problems with taxonomic descriptions. It is well known that the divisions language imposes on reality are different from those the sciences introduce, and there is no one-to-one correspondence between words and taxonomic units cf. (Zgusta 1971: 255). This problem has already been studied, so a few examples will suffice. For instance, the words *raven, rook, jay,*

magpie refer to species. But *bear, frog, woodpecker* refer to groups of animals. (Mayr 1969: 343). Such words as *duck* and *goose* do not correspond with taxonomic subdivisions at all (Campbell, Lack 1985: 157). What is the lexicographer to do in that case? Is he to aim at the nearest taxonomic level, or is he to list all the creatures at the species level which are referred to by that word? Both methods are used in lexicography.

Lack of coherence in dictionaries

It seems that lexicographers, in their concern to show denotation in dictionaries have tried to describe denotation by using some notions adopted from natural sciences. But by doing this they treat natural-language words solely as scientific terms (in their primary, 'basic' sense). The scientific model of the world differs very much however from the naive model, from that commonplace knowledge we employ when using a language. The difference between the two models depends, for instance, on differing classification schemes: living species are classified according to quite different criteria in sciences and in everyday use. *Spiders*, for instance, are for the average person insects (both in English and Polish). For a biologist this is nonsense. It should be noted that, as with names of living species, there are numerous everyday words which are used both in scientific and popular meanings, e.g. *plant* 1. 'any member of the vegetable kingdom', 2. 'a plant smaller than tree or shrub', *animal, fruit, insect,* etc. Dictionaries do not explain in what sense these words are used in their metalanguage, and this is usually in the scientific sense (the same is true of dictionaries with restricted defining vocabulary). Quite often this can lead to considerable confusion, when, for example, *cucumber* or *pumpkin* are classified as *fruit* (e.g. CED). This is particularly troublesome for the foreign user, esp. for one whose cultural background is different. That user might suppose that in Britain cucumbers really are eaten as fruit.

This problem has a wider significance: it points to the lack of a consistent and workable metalanguage, which is so much needed in lexicography. At present lexicographical description is inconsistent across the dictionary: words used as terms in biology are defined by other biological terms, those used in chemistry by chemical terms, etc. Lexicographical description is splintered in this way into a multitude of incompatible sub-descriptions. Another important difference between the naive and the scientific model of the world is that the naive model employs axiological parameters, the world is perceived as emotionally coloured, while the scientific model is, and strives to be, neutral in all respects (cf. Krzeszowski 1985).

Another inconsistency in lexicographic description, on the level of an individual entry, has to be discussed in more detail. An entry on a natural kind, esp. on a frequent one like *cat* or *dog,* does not consist only of one, denotative defi-

nition. Such entry is usually polysemous, the same word may be used with reference to people and to inanimate objects. But the entry is rarely shown as forming one semantic whole. Usually an entry looks like a bundle of homonymous senses which for no evident reason are grouped together. That something which makes the senses interrelated and which even allows for further, unrecorded metaphoric extensions is not included in the entry. That something may be called a stereotype, or a prototype, of a given entity, and it again belongs to a naive model of the world we carry in our heads (cf. Ayto, in this volume). The problem is, however, how to incorporate prototypical features into a dictionary entry and how many of them to include.

Towards better definitions

To answer these questions it is necessary to discuss some characteristic attributes which are associated with the given word and entity. (This cannot be discussed exhaustively here, but a stimulating discussion can be found in Wierzbicka 1985). We are concerned with two sets of attributes: those inherent in the object (referent) itself, and those relating to the social image of it. The attributes of the object can again be divided into those referring to form ("something looks like") and those referring to function ("it is used for", cf. Stock, in this volume). Dictionaries usually describe only form, not function. This is the case with *cucumber* or *pumpkin* (cf. also Hanks 1979).

Let us discuss in more detail the attributes of a socially recognized image of a living species. I will now refer to them as connotations. An example of a connotative attribute might be the "stupidity" of the donkey. As already mentioned, these connotations can have an important function within an entry: they could help to organize an entry more consistently. An entry can be made more consistent by including the features on which metaphoric extensions are based, and these extensions are most often based on connotations. The inclusion of connotations will serve to enhance the coherence and unity of lexicographic description. But the consequences would be more far-reaching. By including these social attributes, the dictionaries would describe a particular viewpoint a language contains, the naive model of the world. Dictionaries seem to be an excellent place for inclusion of this commonplace knowledge. First, because the scientific picture of the world is excellently described in encyclopedias. This is not the case with the naive model. Second, it is obvious that we would not be able to speak any natural language without using that commonplace knowledge, while it is impossible to use only the scientific model while speaking. This point will be taken up later in the paper.

Before discussing the question as to which connotations to include, we have to examine what suggestions can be found in the literature on this subject. As mentioned, there are linguists who maintain that natural-kind words are not definable at all, at least on the grounds of a linguistic theory. Some linguists of that

group believe that for practical purposes pictures of natural-kind entities will perhaps solve the problem (cf. Schelbert, in this volume). Those who suppose the terms can in fact be defined hold that it is only the concept, or, on the other hand, only the object, that should be described in a dictionary. And that object, or that concept, should be considered fully, that is, as fully as theoretical requirements go. Examples of conceptual analysis can be found in Wierzbicka 1985. Wierzbicka claims she can define natural-kind words, including the names of living species. She also thinks that her definitions should be used in dictionaries. But the definitions are 2–3 pages long, and no suggestions are offered on how to abbreviate them (cf. also Piotrowski 1986). The aim of all these linguists seems to be the same: they want to establish very precisely something which, according to them, governs the use of a word. We can call it substance, for instance.

The definitions formulated by linguists and those found in dictionaries have to be quite different because the function of a dictionary is different from that of a linguistic description. A dictionary is not concerned with the description of substance, or of conceptual apparatus in the brain or the mind. A dictionary is rather concerned with texts — it is there to add something to the knowledge the user already has. That addition is to help the user process texts, help in decoding and encoding. It might be said that a dictionary has to aid the user in generating more meanings and forms that it itself contains.[1] Therefore it has to include such components that would engender new meanings and expressions. This is where we return to connotations. They should be included in dictionaries, not only because they give coherence to entries, but because they can also ensure understanding of, for instance, new metaphoric extension. By including connotations a dictionary can have a more predictive power.

Which connotations should be included in a dictionary? For lack of space the methods of how to find them cannot be discussed here. On the other hand, it does not at present seem possible to establish a set of rules for finding connotations. In the view of the present writer the process of including connotations should be gradual. The following four steps are offered for discussion. First, care should be taken to clearly distinguish in metalanguage between scientific and popular meanings of defining words. Second, popular classifications could be included in natural-kind entries. Third, such entries could contain the obvious conceptual component. *Pussy* is soft and fluffy to the touch, which says a lot about the use of the word in slangy contexts. And fourth, it seems it would be good to have explicitly the obvious emotional attitude inherent in the word: *pussy* is nice. *Louse* is not.

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[1] The idea of the dictionary as a sort of "text-processor" is developed in my PhD dissertation: "Methods in bilingual lexicography: the English-Polish dictionary", now in preparation.

I have used the word "obvious" above. It is clear that what will be obvious for one lexicographer will not be so for another. Necessarily the descriptions of connotations will greatly differ in various dictionaries, as they will be based on subjective intuitions of lexicographers. That subjectivism will be checked, however, because, as dictionary-making is now team work, intuitions of more than one lexicographer will be compared. I think that dictionaries can safely become more subjective than they are now, but that this will be another sort of subjectivism, free of personal prejudices.

At this point we can return to the problem of taxonomic definitions. If the view is accepted that a dictionary is used to process texts (cf. Knowles, in this volume), then we should note that scientific taxonomic description of words is useful when a dictionary is used in processing scientific texts. This suggests that dictionaries can, and should, vary as to the kind of description of natural-kind words, depending on the needs of the user they are aimed at. It is obvious that the native speaker's knowledge of prototypes is far superior than any dictionary can offer, and if he looks up a word like *cat* (in the primary sense), that will be most probably for scientific information. A foreign learner, on the other hand, will need some information on the connotations in order to be able to process general texts using an EFL dictionary. Of course, now dictionaries of English for foreign users do attempt to adjust their definitions for them (cf. Appendix). However, the definitions do not differ very much in substance from those found in dictionaries for native speakers. They differ mostly in their wording. EFL lexicography certainly has to move further away from the native-dictionary tradition (cf. Rundell, in this volume).

Dictionaries are constrained by the limitations of space, and that is why they should vary in the type of definition they carry. However, it is tempting to think that a "universal" dictionary, to be used in processing both general and scientific texts, could include both types of definition. This will be perhaps fully attainable only in a "paperless", computerized dictionary. There is also another reason why dictionaries should include both types of definitions, and this relates to the role of the dictionary as a model of the linguistic behaviour of a certain community. If the belief that a dictionary should reflect such linguistic behaviour is taken seriously, then it should be noted that it is characteristic of that behaviour, at least as far as most of Europe is concerned, that it uses some notions from the sciences. Linguists want lexicographers to believe that dictionaries should include *only* the linguistic, naive view of the world (cf. Wierzbicka 1985). But the scientific model of the world seems to have a great influence on the naive model of the same world. John Lyons has said that linguistics can help to transcend the traditional boundary between science and the humanities: it is ideally placed to bridge the gap between the arts and sciences (Lyons 1983). Perhaps the same can be said of lexicography, which has a wider public than any linguistic publication. Perhaps, then, it would be possible to unite the two traditions in lexicography: the subjective pre-nineteenth century approach with the objective, post-nineteenth century one.

Appendix

cat

OED   1. A well-known carnivorous quadruped (*Felis domesticus*) which has long been domesticated, being kept to destroy mice, and as a house pet.

2. fig. As a term of contempt for a human being; esp. one who scratches like a cat, a spiteful or backbiting woman.

COD   Small furry dommesticated carnivorous quadruped, *Felis catus.*

W9   1 a:a carnivorous mammal (*Felis catus*) long domesticated and kept by man as a pet or for catching rats and mice.

CED   1. Also called: **domestic cat**. a small domesticated feline mammal, *Felis catus* (or *domesticus*), having thick soft fur and occurring in many breeds in which the colour of the fur varies greatly: kept as a pet or to catch rats and mice.

OALD   1. small, domestic, fur-covered animal often kept as a pet, to catch mice, etc.

LDOCE   1 a small animal with soft fur and sharp teeth and CLAWS (nails), often kept as a pet or in buildings to catch mice and rats.

dog

OED   1. A quadruped of the genus *Canis*, of which wild species or forms are found in various parts of the world, and numerous races or breeds, varying greatly in size, shape and colour occur in a domesticated or semi-domesticated state in almost all countries. These are referred to by zoologists to a species *C. familiaris* . . .

3. Applied to a person; a) in reproach, abuse or contempt: A worthless, despicable, surly, or cowardly fellow. b) playfully . . .: a gay or jovial man.

CED   1. a domesticated canine mammal, *Canis familiaris,* occurring in many breeds that show a great variety in size and form.

LDOCE   1 a common 4-legged flesh-eating animal, esp. any of the many varieties used by man as a companion or for hunting, working, guarding, etc. It is often called 'man's best friend'.

spider

CED   1 any predatory silk-producing arachnid of the order Araneae, having four pairs of legs and s rounded unsegmented body consisting of abdomen and cephalotrax.

LDOCE   any of many kinds of small 8-legged creatures which make silk threads, sometimes into nets for catching insects to eat — see picture at ARACHNID.

cucumber

OALD   (creeping plant with) long, green-skinned fleshy fruit, usu sliced and eaten in salads, or made into pickle, → the illus at **vegetable**.

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