

Nastassia KUZMENKA

Minsk State Linguistic University

har_nastya@mail.ru

MERONYMIC STRUCTURES FOR NAMES DENOTING PARTS OF LIVING BEINGS IN ENGLISH

INTRODUCTION

The paper focuses on the meronymic type of lexical relations and the problem of part-whole hierarchies (structures) in the English lexicon. Taking into account the well-known statement that the classification of living beings serves as a model for all natural classifications, an attempt is made to construct and compare the hierarchies reflecting the part-whole relations between body part, animal part and plant part terms.

MERONYMIC STRUCTURES

It is a long established fact that the category of meronymy represents one of the fundamental types of semantic relations that structure the lexicon (Miller 1995, Lyons 1977, Cruse 1986, Aitchison 1987, Chaffin and Hermann 1984, Nikitin 1988, etc.). In this connection the following notions, first formulated by Cruse (1986: 159–160), are essential: ‘meronym’ – the word referring to the part, and ‘holonym’ – the word referring to the whole. The names of sister parts of the same whole are called in lexical semantics ‘co-meronyms’. It should be noted that meronymy is a relational notion. That is, a lexical item may be a meronym in relation to a second lexical item, but a holonym in relation to a third one. Thus, *face* is the meronym of *head* and a holonym of *nose* (*mouth*, *chin*, *cheek*, *jaw*, etc.), where *mouth*, *chin*, *cheek*, *jaw*, etc. are co-meronyms (fig. 1). It has been

proved in linguistic theory that meronyms together with their holonyms can form hierarchies (Brown 1976, Miller 1995, Cruse 1986). According to Cruse (1986: 112), "A hierarchy is a grouping of lexical items whose meanings are related in a way that can be represented by means of a 'tree-diagram'". In the meronymic hierarchy (structure) the horizontal relation is **meronymy** and the vertical relation is **co-meronymy**. However, linguists assume that the relation of meronymy is not an ideal guarantor of a well-formed hierarchy, as the peculiarities of meronymic structures may depend on the semantic field their meronyms belong to. In this paper we deal with one of the most complex types of lexical configurations – the part-whole hierarchy (meronymic hierarchy or meronymy) for animal and plant part names. The aim is to reveal the peculiarities of meronymic structures for animal and plant part terms in comparison with that of human body part terms.

ANALYSIS PROCEDURE

Our research is based on definitions taken from the explanatory dictionary of Modern English for advanced learners (OALD). The meaning of English nouns has been analyzed in terms of their semantic components – semes. In the dictionary definitions of the lexical units the semantic component '*part*' has been identified. As a result, 112 meronyms have been revealed. In order to build a meronymic structure it is also essential to identify the holonym. Holonyms have been fixed by the keywords referring to the whole in definitions. For example: *stem* 'the main long thin part of a plant above the ground from which the leaves or flowers grow; a smaller part that grows from this and supports flowers or leaves'. Thus, the name for the part (meronym) *stem* has the word *plant* as its holonym. As a result, five different meronymic structures have been obtained: 1) for human body part terms; 2) for four-legged animal (cow, goat, horse, cat, etc.) part terms; 3) for bird part terms; 4) for plant part terms; 5) for sea animal (shrimp, crab, crayfish, octopus, etc.) part terms.

The majority of linguists claim that the classification of living beings serves as a model for all natural language classifications. Following this statement we assume that the division of the human body into parts serves as a prototype for all part-whole hierarchies. Human body part terms in English form a well-structured hierarchy with 6 substan-

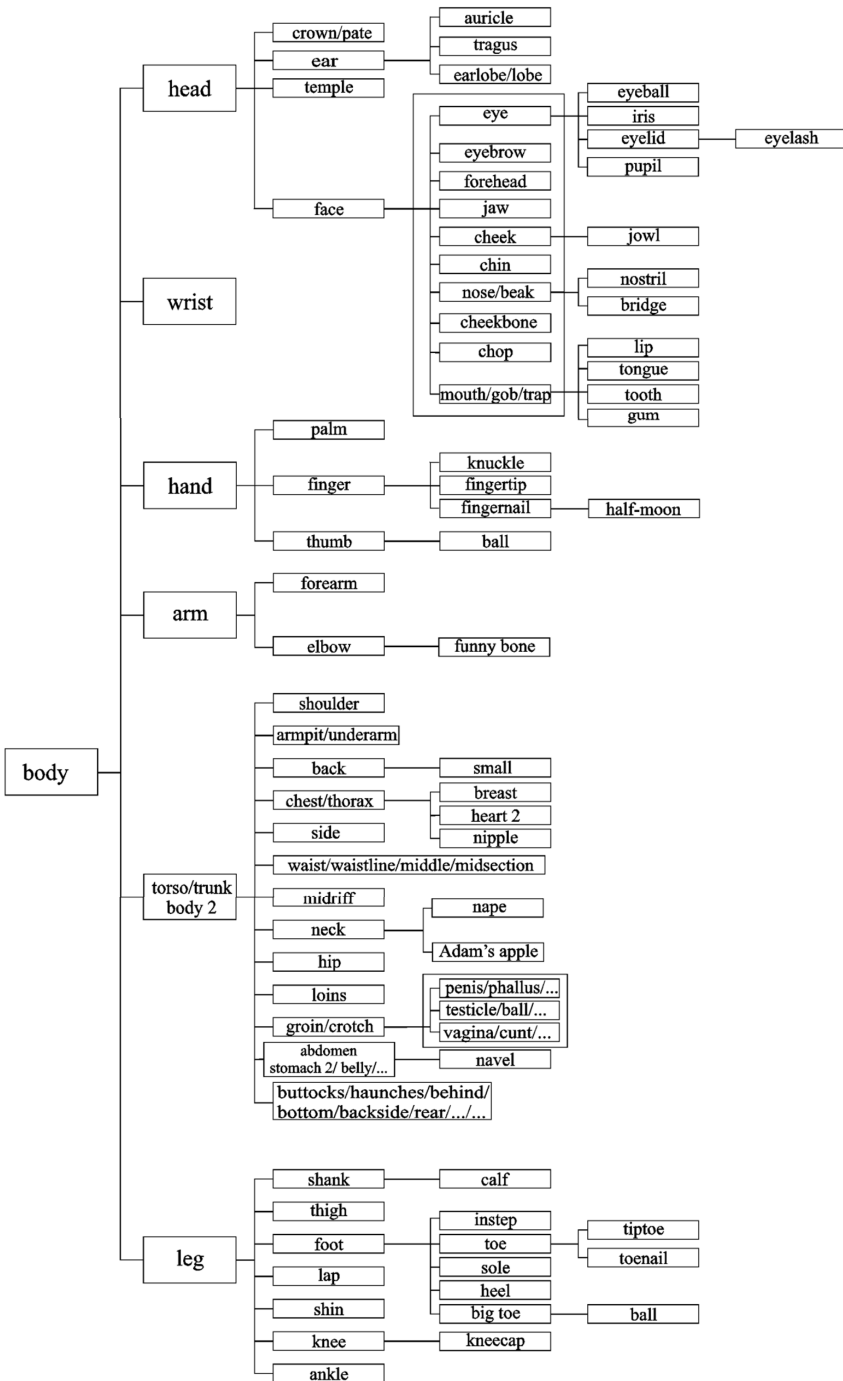


FIGURE 1. Meronymic structure for human body part terms

tive meronymic branches, some of which develop up to 5 subsequent meronyms (see *head* in fig. 1). All branches have nodes which are all labelled by a certain lexical item. We consider this structure a canonical meronymic hierarchy for names denoting parts of living beings (see fig. 1). All the ensuing meronymic structures will be compared with it.

PECULIARITIES OF THE STRUCTURES OBTAINED

It has been revealed that practically all hierarchies are of the same configuration, i.e. they are all branching and have from 2 to 5 subsequent meronyms in the horizontal relation (in a branch). Their main differences relate to: 1) the length of the branches (the number of meronyms in the horizontal relation); 2) the number of co-meronyms in the vertical relation of the hierarchies, and 3) their correlation. None of the hierarchies have reached 6 meronyms in a branch except for the canonical hierarchy (for body part terms). The closest to it is the hierarchy for **four-legged animal part terms**. There are 5 branches with from 1 to 4 meronyms in each (see table 1). The second vertical level is represented by 4 co-meronyms, denoting main essential body parts *head*, *neck*, *body* and *leg* and one meronym that reflects the specific division of the animal body – *hindquarters* ‘the back part of an animal that has four legs, including its two back legs’.

Even fewer nodes are observed in the hierarchy for **bird part terms**. It numbers only 4 branches with a maximum of 4 meronyms in the horizontal relation (table 1).

It is worth mentioning that a large number of animal and bird parts are marked out and named on the basis of their **edibility**: *loin* 1¹ ‘a piece of meat from the back or sides of an animal, near the tail loin of pork’, *trotter* ‘a pig’s foot, especially when cooked and eaten as food’, *ham* ‘the top part of a pig’s leg that has been cured (= preserved using salt or smoke) and is eaten as food; the meat from this’, *thigh* 2 ‘the top part of the leg of a chicken, etc., cooked and eaten’, *wishbone* ‘a V-shaped bone between the neck and breast of a chicken, duck, etc. When the bird is eaten,

¹ Some polysemantic meronyms can be included in different lexical-semantic fields. Meronyms of the field «animal» are marked with a figure, which indicates the number of the word sense in OALD.

TABLE 1. Comparative table of the structures for animal, bird and plant part terms

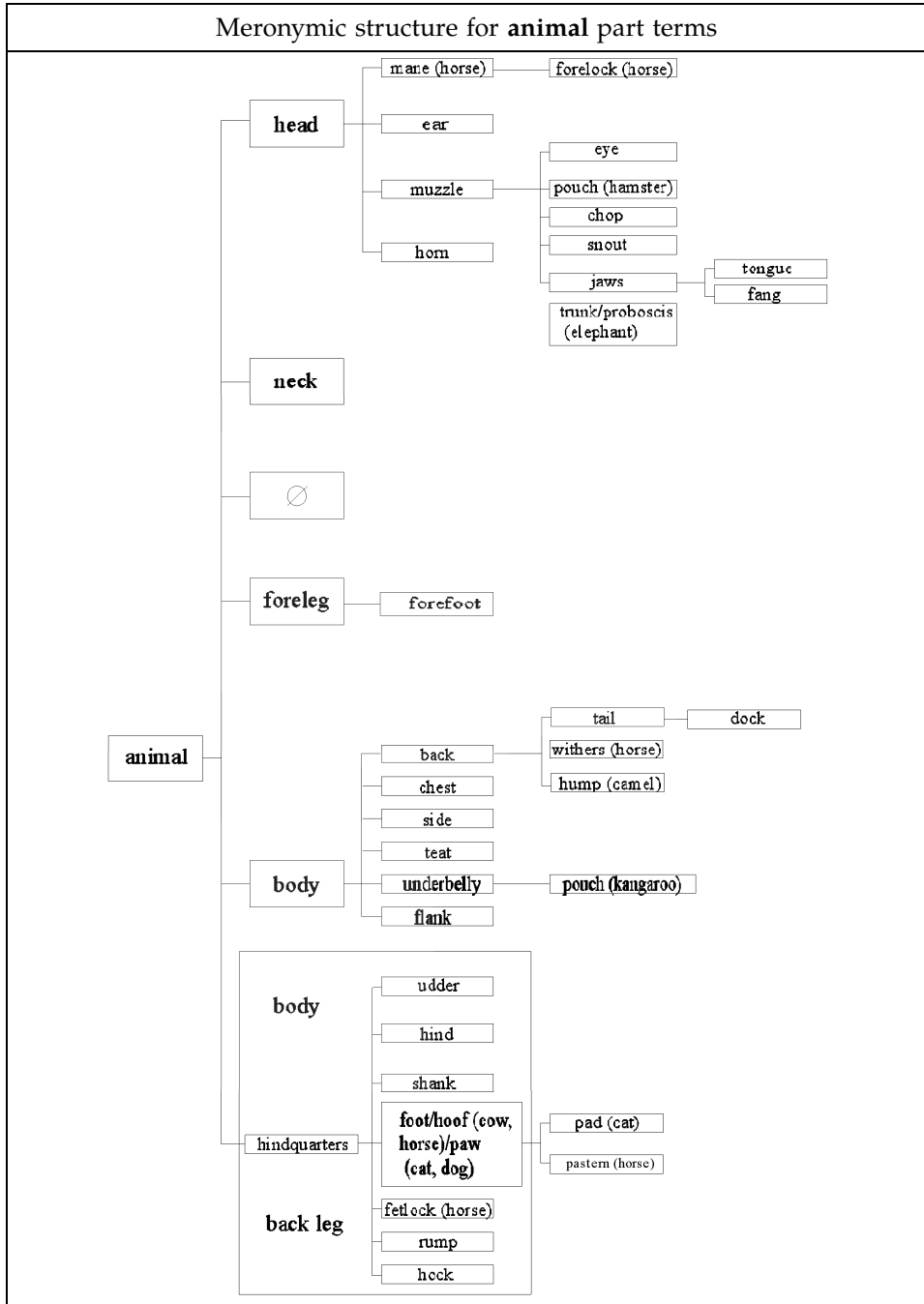


TABLE 1. Continued from page 295

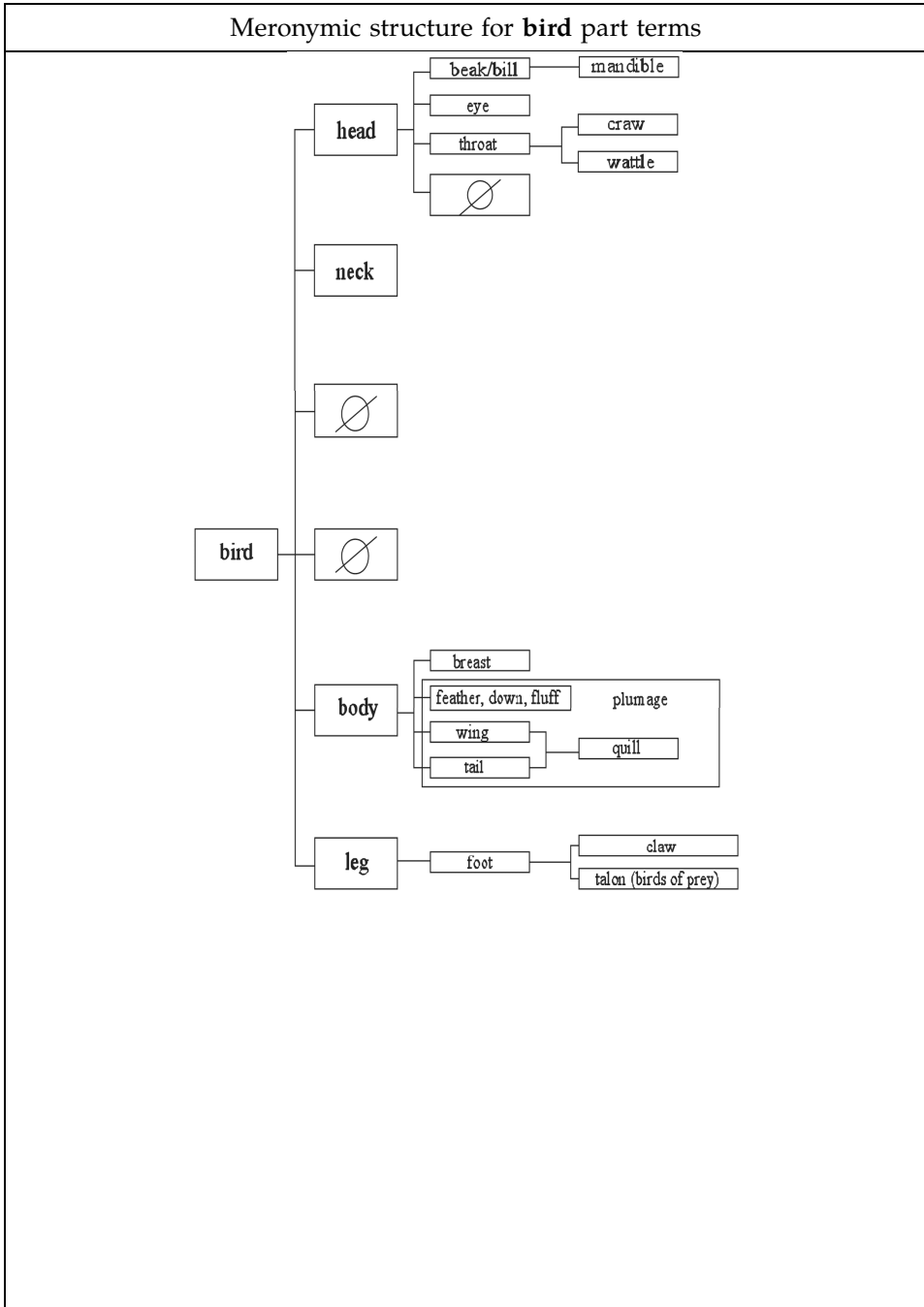
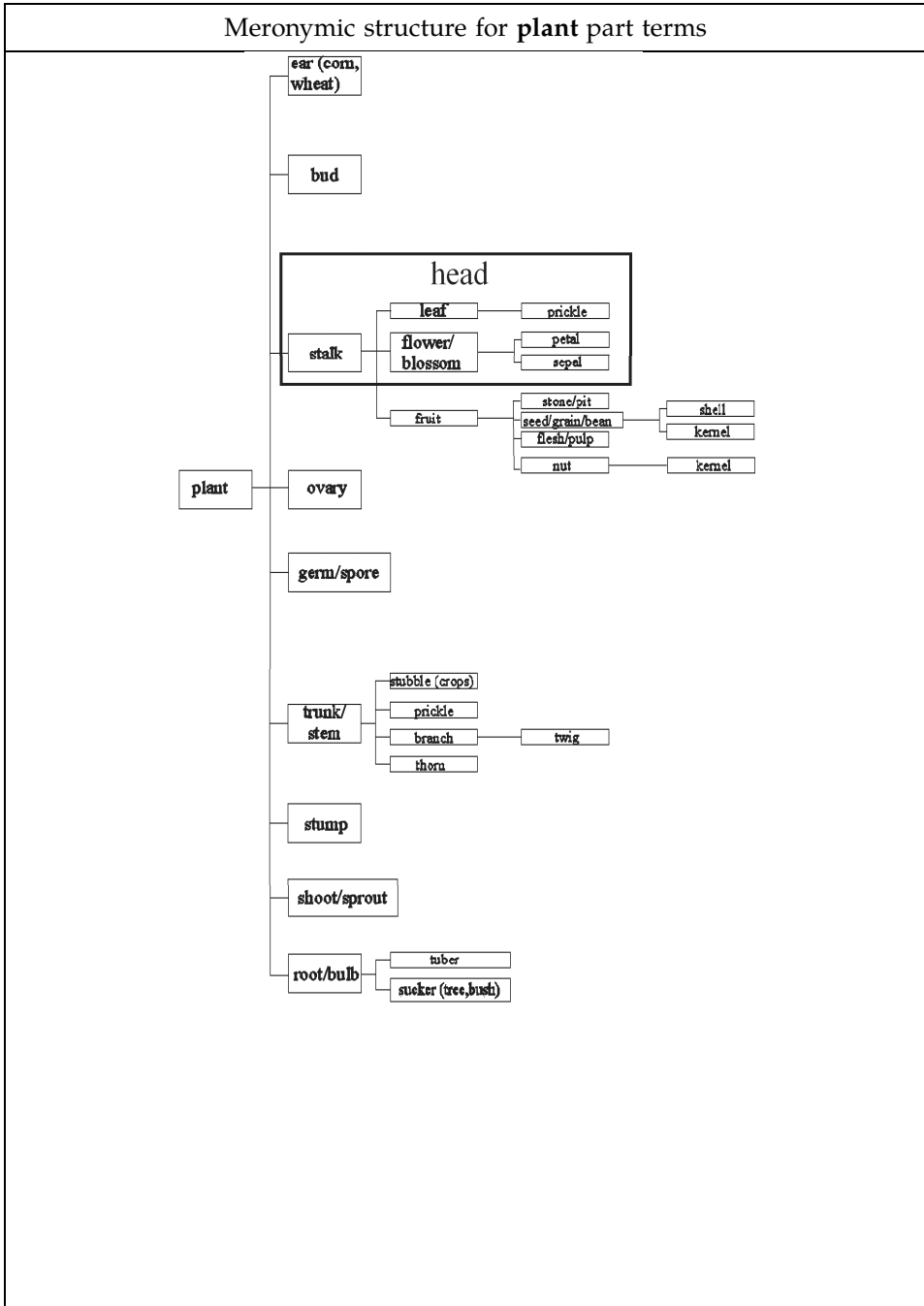


TABLE 1. Continued from page 296



this bone is sometimes pulled apart by two people, and the person who gets the larger part can make a wish'. These lexical items denote parts of a butchered and carved animal (its carcass) but not a living being. Consequently, these words do not belong to pure meronyms and occupy an intermediate position at the intersection of two semantic fields: '*animal*' and '*food (meat)*'. On this basis they are not reflected in the hierarchies but do form an interesting group for further investigation.

Adhering to the table above, we must conclude that although all the structures are branching and quiet deep, they differ in the number of branches and vertical levels. The well-developed hierarchy is obtained in group 2. It can be explained by a higher position of four-legged animals in the overall hierarchy of animals in terms of their functional significance for man. Moreover, as can be observed, there are gaps in the structures, i.e. certain part terms are missing. This seems to show the differences in the division of the referents. So, as the next stage of our research the following meronym-to-meronym correlations have been made. (See table 2).

TABLE 2. Meronym-to-meronym correlations in the structures

Human body part terms	Four-legged animal part terms	Bird part terms
head	head	head
face	muzzle	∅
ear	ear	∅
eye	eye	eye
mouth	jaws	beak/bill
nose	snout	∅
cheek	pouch	∅
neck	neck	neck
arm	foreleg	∅
wrist	∅	∅
hand	forefoot	∅
body	body	body
leg	hindquarters	leg
foot	foot, hoof, paw	foot

As can be seen from the table, all meronyms can be divided into 3 main groups: 1) **one and the same** lexical label is used in English for the same node in all hierarchies (*head, neck, body* and *foot*), 2) **different lexical labels** are used for the same node (*face – muzzle, nose – snout, mouth – jaws – beak, etc.*), 3) no label is used for a number of nodes. The most perceptually salient, structurally and functionally analogous parts (*head, neck, body*) are labelled by the same forms in all the structures obtained, while some visually different parts of animal bodies have different names (*nose – snout, cheek – pouch, face – muzzle, etc.*). Consequently, the animal body is divided in a slightly different way into diverse parts. There are lexical labels for those animal parts only, which distinguish animals 1) from man, 2) from other animals in the system of their perceptual properties (*hump, pouch, horn, trunk*), 3) those animal and bird parts are labelled which are important for human beings in this or that way (sharp and dangerous *fangs*, the part with the largest quantity of meat – *loins, ham, etc.*). The observations above indicate the differences in the categorization of the human and animal body in the English language which are reflected in the meronymic structures obtained.

As for the hierarchies for **sea animal part terms**, they terminate at the second level with no subsequent development. So, for this group of meronyms merely radial structures are observed (see fig. 4 and 5), with labels for the most perceptually and functionally salient parts. This result seems to show that the division of sea animals into parts is less detailed, which suggests the idea that sea creatures are less known to man, as man is a living being of a terrestrial habitat.

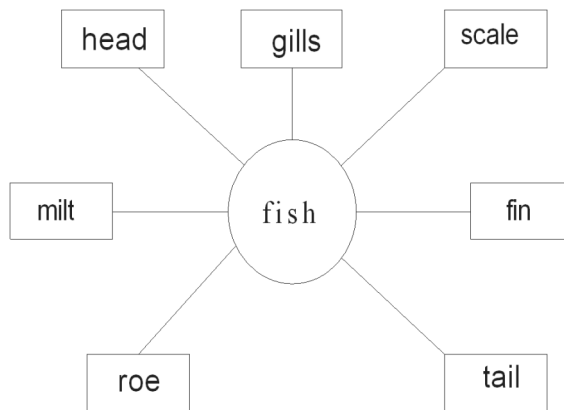


FIGURE 4.

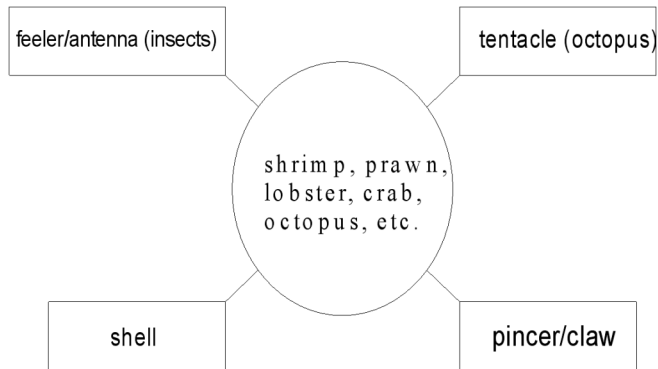


FIGURE 5.

In general, all structures observed represent well-formed meronymic hierarchies that consist of elements of the same general type (names for cohesive physical objects), i.e. the parts denoted by the meronyms have a great degree of spatial cohesiveness and perceptual salience. This fact gives reason to call them, after D. A. Cruse, *segmental parts*. Precisely segmental parts provide the well-formed hierarchies obtained above.

A slightly different situation, though, is observed in the structure for **plant part terms** (see table 1). These terms denote parts that form a greater functional unity with consistency of internal constitution, and are spatially inter-penetrating. It was difficult to identify the exact holonym for a number of meronyms as it might be more than one holonym or it might not exist at all: *flower* 'the coloured part of a plant from which the seed or fruit develops. Flowers usually grow at the end of a stem and last only a short time', *leaf* 'a flat green part of a plant, growing from a stem or branch or from the root', *kernel* 'the part of a nut or seed inside the shell or the part inside the stone of some fruits'. The parts of plants can be called *systemic parts*, the mentioned peculiarities of which influence the configuration of the hierarchy. The overlapping is observed in the hierarchy, which makes it non-congruent: *head (of plant)* 'the mass of leaves or flowers at the end of a stem', *stalk* 'a thin stem that supports a leaf, flower or fruit and joins it to another part of the plant or tree; the main stem of a plant'. As a result, the hierarchy for plant part terms represents a configuration of 5 vertical relations (with weakly developed substantive meronyms) and of 9 main branches, of which only two are developed further. Some fragments of the structure are not fixed (some nodes can

be occupied by meronyms of different holonyms at different levels (see *head*, *stalk* or *prickle*, for example). So, the most perceptually salient parts of any plant are: root, stem and head (includes leaves and branches). The part-whole relations among other plant parts are controversial as it is difficult to identify them in reality (not all plants have parts reflected in the structure), which can be explained by the great variety of plant types.

CONCLUSION

All the hierarchies discussed above present well-formed branching structures. Nevertheless, none of them looks like the model (structure for human body part terms). None of them has the same number of branches and vertical levels. Each structure reveals its own specific configuration with peculiar lexical labels for the majority of the parts. Thus, it turns out that the human body is divided in the most detailed way, which is reflected in the English language in the corresponding holo-meronymic structure. Animals and plants are divided into parts only according to the function their parts play for the human being. In other words, function and utility are the main parameters according to which the animal or plant part is marked out and labelled. On the whole, the comparative study of the meronymic structures for body, animal and plant part terms reveals the correlation between the specific configurations of the structures they form and their semantic domain. The more important functionally and the more perceptually salient for the human being the part is, – the more well-formed the meronymic structure its lexical labels (meronyms) form.

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Summary

The paper focuses on the part-whole type of lexical relations and the problem of part-whole (meronymic) hierarchies in the English lexicon. Taking into account the well-known statement that the classification of living beings serves as a model for all natural classifications, an attempt is made to construct and compare the hierarchies reflecting the part-whole relations between human body part, animal part and plant part terms in English. By means of the analysis of dictionary definitions 112 meronyms (nouns with the semantic component 'part' as the key word of the definition) have been revealed. The meronyms obtained form peculiar hierarchies with different lengths and numbers of branches. The detailed comparative analysis of the hierarchies shows that the human body is divided in the most detailed way. As for other living beings, – function and utility are the main parameters according to which animal or plant parts are marked out and labelled. The study of human, animal and plant part lexemes reveals the correlation between the specific configurations of the hierarchies they form and their semantic domain.

Key words: holonym, meronym, meronymic hierarchy, holo-meronymic structure, part-whole relations

STRUKTURY MERONIMICZNE NAZW OZNACZAJĄCYCH CZĘŚCI CIAŁA ŻYWYCH ORGANIZMÓW W JĘZYKU ANGIELSKIM

Streszczenie

Niniejszy artykuł dotyczy relacji leksykalnych typu część–całość oraz problemu związanego z hierarchiami typu część–całość (meronimicznymi) w leksykonie języka angielskiego. Autorka – przyjmując za punkt wyjścia znane stwierdzenie, że klasyfikacja żywych organizmów może stanowić model dla wszystkich naturalnych klasyfikacji – podejmuje próbę stworzenia i porównania hierarchii odzwierciedlających relacje typu część–całość między określeniami opisującymi części ciała człowieka, części ciała zwierzęcia oraz części rośliny

w języku angielskim. Analizując definicje słownikowe, autorka wyekscerpowała 112 meronimów (rzeczowniki, których kluczowym elementem definicji jest komponent semantyczny 'część'). Pozyskane w ten sposób meronimy, tworzą swoiste hierarchie o różnej długości i liczbie odgałęzień. Szczegółowa analiza porównawcza hierarchii ujawnia drobiazgowy opis ludzkiego ciała. W przypadku pozostałych żywych organizmów, funkcja i użyteczność są czynnikami decydującymi przy wyborze nazwy części ciała zwierzęcia czy rośliny. Analiza leksemów odnoszących się do części ciała zwierząt oraz roślin ukazuje korelację między poszczególnymi konfiguracjami hierarchii, które je tworzą a ich domeną semantyczną.

Słowa kluczowe: holonim, meronim, hierarchia meronimiczna, struktura holonimiczno-meronimiczna, relacja część-całość