
Polysemous Models of Words and Their Representation in a Dictionary Entry

Tinatin Margalitadze
Lexicographic Centre at Ivane Javakhishvili Tbilisi State University
tinatin@margaliti.ge

Abstract

The paper deals with one of the universal models of polysemous adjectives and verbs, namely one-dimensional model and examines the ways of its representation in a dictionary entry. Polysemy is connected with the human perception and cognition of the world. It is determined by the process of perceiving not only particular objects and phenomena, but also the similarities existing between them or seen as such by members of the given language community. It is also connected with the ability of the language to reflect the new, yet un-cognized objects and phenomena by means of their associations and relations with already known, cognized objects and phenomena, i.e. to translate diversity of the world into linguistic unity. This makes polysemy an extremely interesting linguistic phenomenon but also leads to controversies concerning the interpretation of different issues connected with it. The paper touches upon some debatable issues connected with polysemy, such as: boundaries between senses, meaning and context, the role of context in the process of realization of meanings of polysemous words, meanings and sub-meanings, sense-numbering in a dictionary entry, etc. The paper also discusses some peculiarities of lexical meanings of adjectives and verbs.

Keywords: one-dimensional; general semantic component; subsume

1 Introduction

As early as in the 1st century AD, Marcus Fabius Quintilian, a theoretician in oratorical skills, explains in his textbook on rhetoric *Institutio Oratoria* the concepts of metaphor and metonymy, which are important mechanisms of semantic changes and development of transferred meanings of words. The compilation of comprehensive explanatory dictionaries in the 17th century, first in Italy (1612) and then in France (1694), in the 18th century's England (*A Dictionary of the English Language* by Samuel Johnson, 1755), made a significant contribution to the description and study of semantics as a field of knowledge, and particularly to that of polysemy. In the early 20th century, a German linguist Hermann Paul distinguishes between usual (*usuelle Bedeutung*) and occasional meanings (*okhasionelle Bedeutung*), drawing the attention of linguists to context as an important tool for the realization of polysemous meanings of a word (Paul 1920: 75). Since then, much has been written on polysemy and context and the issue is still under discussion. Although it is not the aim of the present paper to dis-

cuss all problems connected with polysemy, still we cannot avoid touching upon some important issues, namely: What is the meaning of a polysemous word? Does it exist on the systemic level of language, or the meaning of a polysemous word is entirely determined by the context in which the word is used? Does a polysemous word have one abstract / general meaning, activated differently in different contexts, or does its structure represent a set of interconnected lexical units (LU) arranged into a single whole by means of various semantic relationships?

These issues aroused bitter controversy not only in 1950s and 1960s (Firth 1968; Antal 1963; Ulmann 1964 and others). Over the last 10-15 years, many scholars yet again discuss these issues and, as it seems, the answer is still not unequivocal (Stock 1984; Atkins 1993; Kilgariff 1997; Hanks 2000; Rundell 2002; Kosem 2008; Trap-Jensen 2010 and others). “I don’t believe in word senses”, states Sue Atkins (Atkins 1993). According to P. Hanks, a word does not have separate meanings, but rather a set of meaning potentials, which may be activated in a particular context (Hanks 2000). M. Rundell distinguishes between senses of polysemous words with clearly distinct meanings which, in this respect, “conform quite well to the conventional dictionary model, and much fuzzier *meaning-clusters*, where a basic semantic core is elaborated, in real text, in a variety of ways” (Rundell 2002: 148). More and more questions arise on how to present word meanings? How to find boundaries between senses? Lumping or Splitting? How to deal with the issue of meaning clines? How are meanings of polysemous words activated in a context?

Such discussions led some scholars even to the questioning of lexicographic practice of division of words’ meanings into senses, particularly for NLP purposes (Kilgariff 1997; Hanks 2000).

The study of above issues is important not only from the theoretical point of view, in order better to perceive the phenomenon of polysemy, but also from the viewpoint of representing a polysemous word in a dictionary entry, also for NLP purposes. The present paper expounds on one of the universal models of polysemous words studied in adjectives (Margalitadze 1982), later in verbs and nouns (Margalitadze 2006), namely the one-dimensional model. The study of this model shed some light on specific debatable issues of polysemy.

2 General Semantic Component and Subseme

As mentioned above, one-dimensional model is characteristic of adjectives and verbs. For the description of the present model two semantic components of a word’s lexical meaning are to be introduced: general semantic component, and subseme. ‘General semantic component’ (GS) denotes that semantic component of word, which serves as the basis for the development of a number of LUs of polysemous adjectives and verbs.

By the term ‘subseme’ we denote the semantic component which serves to differentiate LUs of a polysemous word. The subseme concretizes the abstract meaning of GS in each particular LU, thus activating meanings of polysemous adjectives and verbs¹.

In order to illustrate the GS (marked in blue colour in examples given below) and the subseme (marked in red colour in examples given below), let us examine the adjective STRAIGHT. LUs of the adjective concerned are based on the GS – being free from deviation / bending /.

(1) STRAIGHT

1. Direct, not crooked (a straight street, a straight edge, a straight railway line) –

being free from deviation / bending / in *direction*

2. Erect, not crooked or stooping (a straight back) –

being free from deviation / bending / in *deportment*

3. Direct, shortest, uninterrupted (a straight flight, a straight road, a straight path) –

being free from deviation in *course*

4. Straightforward, frank, open (a straight answer, a straight question, straight talks) –

being free from deviation in *truth, openness, frankness*

5. Fair, virtuous, honest (a straight woman) –

being free from deviation in *dealings / rectitude /*

6. Consistent, logical, clear (a straight thinker) –

being free from deviation in *some method*

7. Conventional; respectable (she looked straight, a straight play) –

being free from deviation from *conventional, accepted, traditional behaviour / norms / views*

and so on.

2.1 Systemic Context and Subseme

The first example represents the following meanings of the adjective straight:

1. Direct, not crooked;
2. Erect, not crooked or stooping;
3. Direct; shortest; uninterrupted;
4. Straightforward, frank, open;
5. Fair, virtuous, honest;
6. Consistent, logical, clear;
7. Conventional; respectable

1 The term ‘general semantic component’ is not an adequate translation of the Georgian name given to this semantic component, which is well rendered by its Russian equivalent *сквозная сема* ‘skvoznaia sema’ (literally ‘through-going semantic component’). *Сквозная сема* ‘skvoznaia sema’ has its origin in the theatrical term introduced by Constantin Stanislavski – “through-going action” (*сквозное действие*). In fact, the term aptly expresses the essence of the semantic component identified in the semantic structure of verbs and adjectives.

and so on.

Adjectives and verbs denote an important logical category of 'feature': a feature, quality of an object – in adjectives, and a feature of an action or a state in verbs. The feature denoted by these words is singled out from different classes of objects or actions / states. Accordingly, adjectives and verbs contain in their meanings various expressions of this or that feature in objects or actions of different classes. As a result of this, along with each meaning of an adjective or a verb, there is constantly implied a systemic context denoting components of one and the same category of the objective reality.

Systemic context of the first meaning of the adjective STRAIGHT are the nouns denoting objects having linear shape (*a street, an edge, a railway line, etc.*). Out of this group of nouns, the GS 'being free from deviation / bending /' singles out the common seme '*direction*', which becomes included in the semantic structure of the given meaning of the adjective as its component, and concretizes the general meaning of the GS 'being free from deviation / bending /' – 'being free from deviation / bending / in *direction*', thus enabling the realization of the meaning 'straight'.

Systemic context of the second meaning of STRAIGHT are the nouns denoting back, shoulders, *etc.* Out of this group of nouns, the GS 'being free from deviation / bending /' selects the common seme '*deportment*' which becomes included in the semantic structure of the given meaning of the adjective as its component, and concretizes the general meaning of the GS – 'being free from deviation / bending / in *deportment*', thus enabling the realization of the meaning 'erect, not crooked or stooping'.

Systemic context of the third meaning of STRAIGHT are the nouns denoting flight, road, way, *etc.* Out of this group of nouns, the GS 'being free from deviation' selects the common seme '*course*', which concretizes the general meaning of the GS – 'being free from deviation in *course*', thus enabling the realization of the meaning 'direct, shortest'.

Systemic context of the fourth meaning of STRAIGHT are the nouns denoting conversation, question, answer, *etc.* Out of this group of nouns, the GS 'being free from deviation' selects the common seme '*truth, openness*', which concretizes the general meaning of the GS – 'being free from deviation in *truth, openness*', thus enabling the realization of the meaning 'straightforward, frank, open'.

Systemic context of the fifth meaning of STRAIGHT are the nouns denoting human beings. Out of this group of nouns, the GS 'being free from deviation' selects the common seme '*dealings, rectitude*', which concretizes the general meaning of the GS – 'being free from deviation in *dealings, rectitude*', thus enabling the realization of the meaning 'fair, honest'.

Systemic context of the sixth meaning of STRAIGHT are the nouns denoting thinking, thinker, *etc.* Out of this group of nouns, the GS 'being free from deviation' selects the common seme '*method*', which concretizes the general meaning of the GS – 'being free from deviation in *some method*', thus enabling the realization of the meaning 'consistent, logical', and so on.

Thus GS 'being free from deviation / bending /' singles out the common semes – subsemes from systemic contexts: '*direction*' from nouns, denoting objects with linear shape; '*deportment*', from nouns denoting back, shoulders, *etc.*; '*course*' from nouns denoting flight, road, way, and so on. These subsemes enter the semantic structure of LUs of the adjective STRAIGHT as their component, and concretize

the abstract meaning of the GS – ‘being free from deviation / bending / in *direction*’, in *deportment*’, in *course*’, etc, thus activating the realization of LUs: ‘straight’, ‘erect, not crooked or stooping’, ‘direct, shortest’ and so on.

GS and subseme can be illustrated on the example of other adjectives and verbs.

(2) LUs of the adjective CROOKED are based on the GS – having deviation in / from /.

1. not straight, bent, twisted (crooked streets, a crooked road, a crooked blade) –

having deviation *in direction*

2. deformed; bent (an aged man with a crooked frame, yellow and crooked teeth) –

having deviation *from normal form*

3. dishonest, not straightforward (crooked politicians, crooked dealings) –

having deviation *in rectitude*

4. fraudulent; illegal (crooked business, crooked business deal) –

having deviation *from legal frame*

and so on.

(3) LUs of the adjective LOW are based on the GS – being below the average level.

1. of small upward extent (a low wall, a low hill) –

being below the average level *in upward extension*

2. not elevated in position (low bridges, Low Countries) –

being below the average level *in elevation from the ground or some other downward limit*

3. not tall, short (a low man, a man of low stature) –

being below the average level *in statute*

4. not high in amount (low price, low wages) –

being below the average level *in amount*

5. deficient in degree of intensity (low redness, low colour) –

being below the average level *in degree of intensity*

6. not loud (low voice, low laugh) –

being below the average level *in volume*

7. of humble rank, position (low birth, low life) –

being below the average level *in social rank*

8. wanting in elevation, of inferior quality (low art, low standard) –

being below the average level *in quality*

9. wanting in decent breeding, vulgar, coarse (low person, low company) –

being below the average level *in social “respectability”*

and so on.

(4) LUs of the verb ESCAPE are based on the GS – breaking / getting / away from.

1. to get away, to get free (to escape from prison, to escape from the army) –

breaking / getting / away from *(physical) confinement*

2. to avoid or retreat from the realities of life (to escape reality) –

- breaking / getting / away from *unpleasant realities of life*
 - 3. to avoid or elude an evil that threatens (to escape poverty, to escape punishment) –
 breaking / getting / away from *misfortune of any kind*
 - 4. to avoid psychological problems (to escape television addiction) –
 breaking / getting / away from *mental / psychological / problems*
 - 5. to elude notice or recollection (to escape one’s mind, to escape smb.’s eyes) –
 breaking / getting / away from *notice / mental grasp /*
 - 6. to leak from a container (of a gas, liquid, etc) –
 (as if) breaking / getting / away from *some confining envelope or enclosure*
- and so on.

2.2 Mechanism of the Interrelation between Adjective / Verb and Noun

Figure 1 demonstrates the underlying mechanism of the interrelation between adjective or verb and noun in their semi-automated syntagms, where dotted line represents GS, ellipse represents a LU of a polysemous adjective or verb, and a circle – the systemic context of the given LU. GS acts from adjective or verb to noun ($A / V \rightarrow N$). GS determines the choice of nouns, from them selects common feature – subseme, which concretizes its abstract meaning. Whereas subseme acts in the opposite direction, from noun to adjective / verb ($N \rightarrow A / V$). Subseme enters the semantic structure of adjectives or verbs, concretizes meaning of GS and activates individual LUs of polysemous adjectives and verbs.

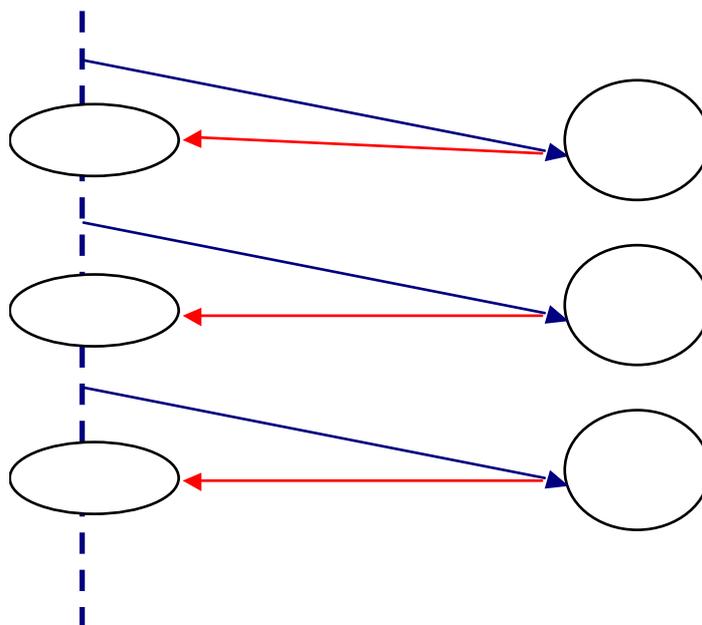


Figure 1: Semi-automated Syntagms of Adjectives / Verbs and Nouns.

- GS is a generative semantic component, providing the basis for the development of a number of LUs;
- GS is a common semantic component, a kind of semantic “thread” uniting several LUs of a polysemous word;
- GS is an integrating seme, by means of which a polysemous verb and adjective can function as one word;
- GS is generated in paradigmatic, that is, vertical section. Its existence is revealed through the comparison of several meanings of a polysemous word;
- By its structural and semantic status, GS is more abstract, than differential and potential semes making up the lexical meaning of a word, as far as it governs several LUs of verb and adjective;
- GS inherently implies the idea of the classes of objects, which may be characterized by a given verb or adjective. Accordingly, it motivates or blocks the selection of a systemic context, wherewith a given verb or adjective may liaise.

GS differs from common semantic component, archeseme or hyperseme by being a generative semantic component. Not only is it the common semantic component of several LUs, but it is also the basis of the generation of polysemous meanings of verb and adjective and does govern them.

- Subseme is a differential seme, on the basis of which a concrete LU of verb and adjective is generated. Like GS, we regard subseme as a generative seme. While GS generates several LUs of polysemous verb and adjective, subseme serves as the basis for the creation of one specific LU;
- Subseme is singled out from an entire class of objects, which is represented by a definite group of nouns. Consequently, it implies the idea of the given class of objects and, accordingly, that of the definite area of denotation;
- Upon the syntagmatic axis, subseme is generated in the course of interrelationship between verb and adjective on the one hand, and semantic structures of noun on the other hand;
- As a result of the existence of subseme, for each LU in the semantic structure of verb and adjective there is generated a systemic context united by the given subseme.

3 One-Dimensional Model

‘One-dimensional’ are termed such polysemous verbs and adjectives, all LUs of which are generated on the basis of a single GS (see Figure 2).

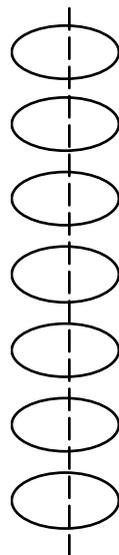


Figure 2: One-Dimensional Model.

All the examples discussed above represent one-dimensional models. One-dimensional is not the only model of polysemous adjectives and verbs. There are more models described for these parts of speech (Margalitadze 1982; 2006) but this model is quite universal and many adjectives and verbs develop their LUs on the basis of one GS. Below are given more examples of one-dimensional adjectives and verbs.

- (5) Polysemous meanings of the English verb 'to break' are based on the GS - 'destroying / violating / the completeness, wholeness, continuity'. Its subsemes in different LUs may be *a bone, a plate, a surface, skin, a performance, a lecture, spiritual, moral or financial state, silence, etc.*
- (6) The verb 'to kill' has the GS - 'depriving of some essential quality', which is concretized by different subsemes in different LUs: *life, vitality, activity, feeling, desire, etc.*
- (7) The GS of the verb 'to erupt' is - 'bursting forth from natural or artificial limits', concretized by the following subsemes: *volcano, water, fire, air, soldiers, etc.*
- (8) The one-dimensional adjective 'dull' has its polysemous meanings generated on the basis of the GS - 'wanting some essential quality'. Its subsemes in different LUs are: *wit, sensibility or keenness of perception, motion or action, vivacity or cheerfulness, colour, intensity, etc.*
- (9) All polysemous meanings of the adjective 'small' are developed on the basis of the GS - 'being less than average' (being less than average in *size, in statute, in number, in duration, in importance, in amount, in rank or condition, in scale, etc.*).
- (10) All polysemous meanings of the adjective 'great' are developed on the basis of the GS - 'being more than average' (being more than average in *size, in number, in duration, in importance, in rank or condition, in scale, etc.*).
- (11) All polysemous meanings of the adjective 'high' are developed on the basis of the GS - 'being above the average level' (being above the average level in *upward extension, in elevation from the ground or some other downward limit, in stature, in amount, in social rank, etc.*).

4 Discussion

As it has been shown by the above analysis, one-dimensional words have meanings of equal status. What may seem an abstract / general meaning, meaning potential or a semantic core activated differently in real contexts, is in fact a semantic component, the GS which is very general, very abstract, as far as it contains in itself the idea of those classes of words wherefrom it is singled out. Whenever the GS is concretized by a subseme, there appears an individual meaning of a polysemous word, an individual LU. Subseme shows the boundaries between senses of a polysemous adjective and verb. Thus, one-dimensional model has an extremely abstract GS and meanings of equal status.

The role of context must be mentioned specifically. Context is always necessary for the actualization of the meanings of a polysemous word, but the GS, as we have seen, is an active semantic component that can select or block nouns in question. Context can not trigger any meaning of one-dimensional adjective or verb which is not present in their semantic structure. Consequently, context reveals what is already present in the semantic structure of adjective or verb, it does not motivate meaning, it actualizes existing meanings. This shows the relative independence of adjectives and verbs within the language system.

Feature does not exist independently in the objective reality. It is present inside object and is unimaginable without the latter. However, the feature translated into a linguistic category appears as a separate category, as that of adjective and verb, thus acquiring a different linguistic status. Within the system of language, feature acquires relative autonomy, which results in complex interrelations between adjective and verb and their systemic context in their lexical syntagms. The role of systemic context in the process of realization of meanings of verb and adjective consists in conveying particular information in the form of subseme to the semantic structure of verb and adjective. This information concretizes general meaning of the GS and breaks it up into concrete variants, thus enabling the differentiation and realization of separate LUs of verb and adjective. On the other hand, verb and adjective, as independent parts of speech, contain such semes within the semantic structure of their meaning, which not only generate a number of LUs, but also determine the selection of a definite, rather than any noun. Within the language system, the interaction between objects / actions and their features is formed on a completely different level of generalization.

5 One-Dimensional Words in a Dictionary Entry

Dictionaries of the English language give different interpretation to the polysemous words of the described model and represent them accordingly in a dictionary entry. E.g. MEDAL, Oxford Dictionary of English treat the following meaning of 'escape' – leak from a container (of a gas, liquid, etc) – as a full-fledged meaning of this verb, while OED, Shorter Oxford English Dictionary, Webster's Third New International Dictionary interpret it as a sub-meaning of 'escape'. Likewise, LU – avoid capture, punis-

hment, or something unwelcome – are meanings according to Shorter Oxford English Dictionary, Webster's Third New International Dictionary, while MEDAL, Oxford Dictionary of English treat them as sub-meanings, meaning-clusters. Such examples may be cited *ad infinitum*.

LUs of one-dimensional model have equal status. Semantic relationships between LUs, generated on the basis of GS, are equipollent and not that of dependence. Consequently, LUs should be represented as full-fledged meanings in a dictionary entry and they should be numbered in the same manner by Arabic numerals. GS may be given at the beginning of an entry as a general description of the feature. Each LU should be supplied with its systemic context, i.e. with nouns denoting one and the same category of the objective reality. Below are given some examples of entries.

(12) Straight *adjective*

[being free from deviation / bending]

1. Direct, not crooked (*used with nouns denoting objects, having linear shape*);
a straight street, a straight edge, a straight railway line;
2. Erect, not crooked or stooping (*used with nouns back, shoulders, etc*)
a straight back;
3. Direct, shortest, uninterrupted (*used with nouns denoting travelling on foot or by other means*)
a straight flight, a straight road, a straight path;
4. Straightforward, frank, open (*used with nouns denoting talking*)
a straight answer, a straight question, straight talks;
5. Fair, virtuous, honest (*used with nouns denoting human beings*)
a straight woman;
6. Consistent, logical, clear (*used with nouns denoting thinking*)
a straight thinker;

and so on.

(13) Escape *verb*

[breaking / getting / away from usually smth. unpleasant]

1. to get away, to get free (*used with nouns denoting places of physical confinement*)
to escape from prison, to escape from the army;
2. to avoid or retreat from the realities of life (*used with nouns denoting unpleasant realities of life*)
to escape reality;
3. to avoid or elude an evil that threatens (*used with nouns denoting any misfortune*)
to escape poverty, to escape punishment;
4. to avoid psychological problems (*used with nouns denoting different addictions*)
to escape television addiction;

5. to leak from a container (*used with nouns denoting gas, liquid, etc*)

and so on.

Another alternative of a dictionary entry may be GS+subseme descriptions in each LU of the one-dimensional adjective or verb (see example 14).

(14) Straight *adjective*

[being free from deviation / bending]

1. Direct, not crooked (*used with nouns denoting objects, having linear shape*);

a straight street, a straight edge, a straight railway line;

[being free from deviation / bending / in direction]

2. Erect, not crooked or stooping (*used with nouns back, shoulders, etc*)

a straight back;

[being free from deviation / bending / in deportment]

3. Direct, shortest, uninterrupted (*used with nouns denoting travelling on foot or by other means*)

a straight flight, a straight road, a straight path;

[being free from deviation / bending / in course]

4. Straightforward, frank, open (*used with nouns denoting talking*)

a straight answer, a straight question, straight talks;

[being free from deviation / bending / in truth, frankness]

5. Fair, virtuous, honest (*used with nouns denoting human beings*)

a straight woman;

[being free from deviation / bending / in dealings / rectitude /]

6. Consistent, logical, clear (*used with nouns denoting thinking*)

a straight thinker;

[being free from deviation / bending / in some method]

and so on.

6 Conclusion

The study of the deep structure of interrelation between adjectives / verbs and nouns in their semi-automated syntagms has revealed the active generating semantic component – GS in the semantic structure of polysemous adjectives and verbs. On the one hand, GS generates several LUs and governs them, on the other hand, GS inherently has the knowledge of the classes of objects wherefrom it is singled out, thus motivating or blocking the selection of nouns wherewith adjectives and verbs may liaise. GS selects the subseme from the systemic context, which enters the semantic structure of LU and is present there. As a result of this, along with each meaning of adjective or verb, there is constantly implied a systemic context denoting components of one and the same category of the objective reality.

The interrelation between GS and subseme and the presence of subseme in the semantic structure of LU indicates that context reveals existing meaning of adjective and verb and does not motivate it.

Subsemes mark the boundaries between senses of polysemous adjectives and verbs.

One-dimensional adjectives and verbs have meanings of equal status, which should be numbered in the same manner in a dictionary entry, as full-fledged meanings.

GS may be given in a dictionary entry, as a general description of the feature, expressed by adjective and verb (see examples 12, 13).

Each LU should be supplied with its systemic context, specifying the group of nouns used with the respective LU (see examples 12, 13).

Unlike identifying words such as nouns which, depicting objects and phenomena, comprise multiple semantic components in the semantic structure of their meanings, verbs and adjectives denote feature. Accordingly, their lexical meaning is “scarce” of semantic components and thus it is natural that polysemous structure of adjectives and verbs should be characterized by linear development and one feature, one semantic component should become the basis for the formation of multiple meanings.

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