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Polysemy and Homonymy and their Importance for the Study of Word Meaning

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Abstract

In this article we examine the concepts of polysemy and homonymy. After a broad overview of the topic we focus on the treatment of several examples in dictionaries and indicate how listing problems can arise. We look at how polysemy and honomymy are dealt with in Chinese - a language rich in ambiguous words full of connotations and associations and we look at some of the ensuing problems facing Chinese dictionary writers and suggest a user friendly model for ambiguous lexical entries. We explore how several English words such as the polysemous preposition 'over' can be dealt with in terms of image schemas and how this indicates a structured system in the mental lexicon. Vyvyan Evan's treatment of 'time' is also examined, his argument as to how it might be arranged in semantic memory and his conclusions about the lexicon having systematic semantic structure. We conclude by conceding that more work is required before the issues addressed in this paper can be unambiguously resolved.

1. Introduction

The aims of this paper are to examine the notions of homonymy and polysemy and their importance in regard to word meaning. "*If I accomplish nothing else in this story, I hope I will persuade you that human language is so vague and ambiguous that only a very clever brain could possibly understand it*" (Miller 2001, p.1) The hope of resolving the issue of how to deal with ambiguous words and their polysemous or homonymous nature in Miller's article while enthralling the reader disappoints at the end as he concludes with the notion that in fact more study on the subject is required before absolute resolution can even be approached. While context and general knowledge are useful tools it would seem there is no single clear cut way of resolving the issues without further study and research.

I propose to introduce and give a broad outline of the topic of polysemy and homonymy with some background information; discuss how polysemy and homonymy are sometimes dealt with in Chinese and indicate a theoretical model for lexicographers which tries to clarify meaning; examine how polysemy and homonymy are dealt with in English specifically the preposition *over* and explore Evans' approach to polysemy and the lexeme *time* and conclude with some suggestions for further exploration. I will now clarify and give examples of homonyms and polysemes and indicate how problems can arise and how examples of some of these words are listed in dictionaries. The word *bank* as in *a river bank* and *Bank of Ireland* are two semantically unrelated words and are known as homonyms. However, if we look at the word *mole* as in *the mole burrowed into the ground* and *MI5 found the mole* we can see that there might be a semantic link. *Mole* in these two phrases is an example of polysemy.

In French, for example *seul* means both alone and lonely, a case of polysemy. *Voler*, on the other hand means *fly* and *steal,* an example of a homonym. However, although they are listed as different words in the dictionary, they both derive from the Latin word *volare.* This last example suggests potential problems in deciding whether a word is a case of polysemy or homonymy. This is not a problem we encounter in everyday communication as we know which sense is being referred to by contextual clues, it is

however, a problem for dictionary compilers. *"[...] polysemy poses a problem in semantic theory and in semantic applications, such as translation or lexicography"* (Ravin & Leacock 2002, p.1). Generally polysemes are listed under a single entry whereas homonyms are listed under several entries. However, there can be differences from one dictionary to another. Languages are also constantly changing. Word meanings change over time and new uses and meanings replace old ones. The word *gay* in English or *gaio, gai, guei, gay, gaiato, gaius, alegre, alegrinho, alegrete* in Portuguese once meant *joyful, cheery, bright, lively*. Nowadays it is a neutral term in both languages for *homosexual*. Another example is the word *wan* (Old English *wann*) which originally referred to the night or darkness. In late Middle English, it developed its modern sense of *pale*. From being used to refer to the unhealthy pallor of a person's face when ill it came to mean *livid*, then *pale*. When both meanings are almost opposites, it is inevitable that over time one meaning survives and the other does not. However, in some cases multiple meanings coexist as existing words are applied to new situations.

2. Polysemy vs homonymy - an overview

I will now give some historical background to polysemy and homonymy and briefly mention how lexicographers attempt to address problems which arise in cases of vagueness. Polysemy comes from the Greek word πολυσημεία which means 'multiple meaning'. An example is where *mole,* in the introduction, refers to *a small burrowing animal* and also *a spy burrowing for information, mole* refers to different things but the meaning derives from the *small burrowing animal* meaning. In polysemy meanings are usually etymologically and semantically related and have often at one point been used in metaphors. In homonymy, they are etymologically unrelated. A homonym is a word that has the same pronunciation and spelling as another word but has a different meaning. An example of homonymy in English is the word *stalk* which means to follow someone around and it also refers to a part of a plant or flower. The meanings, unlike in cases of polysemy, are not related to each other in any way semantically, they are completely different.

A problem arises when etymologically related words drift apart over time and the semantic value changes in relation to the original meaning. The problem of vagueness arises too, 'The distinction is between those aspects of meaning that correspond to multiple senses of a word versus those aspects that are manifestations of a single sense.' (Ravin & Leacock 2002, p.2). In spite of logical tests, linguistic tests and definitional tests being proposed by Geeraerts (1993, pp.223-272) to attempt to solve this problem of vagueness, the nature of their unsatisfactory results have raised questions about how we view meaning and lexical semantics. Ravin and Leacock (2002, p5) suggest 'Meanings may not be fixed entities, but rather different overlapping subsets of semantic components…[…]'.

According to Lyons (1977, p.550) lexicographers generally apply two important criteria to lexemes when deciding polysemy and homoymy. One is the 'historical derivation of words' (Lyons 1977, p.550) and the other 'in drawing the distinction between homonymy and polysemy is unrelatedness vs. relatedness of meaning' (Lyons 1977, p.551). Ahrens, Chang, Chen & Huang (1998) offer an alternative model for lexicographers of Chinese.

2.1 Homonymy and polysemy in Chinese

I will now look at how polysemy and homonymy are dealt with in Chinese - ambiguity; problems the written and spoken systems present; and a suggested model for lexical entries. Homonyms are widespread in the Chinese language. Many homonyms can have positive or indeed taboo connotations and associations.

(1)   Qín is the word for celery
(2)   Qínláo is the word for industrious

There is a belief in Chinese culture that eating celery will make you industrious. On the other hand the word for *four* is *sì.* The word for *die* is also *sĭ*. Some people refuse to live on the fourth floor of a building or buy an apartment numbered 4. The Chinese also believe that it is inappropriate to give a clock as a gift as the word for *clock - zhōng* is the same as the word for *end - zhōng* and it is believed that a gift of a clock will bring death – the end of a life. Jordan (2006) remarks 'A restricted syllable inventory and syllable-level semanticity, tend in combination to generate homonyms. The tendency of spoken language to favour bisyllabic compounds, which reaches even to synonym compounds, has the effect of disambiguating those homonyms' (Jordan 2006, p.5)
He illustrates this point with the following example :

(3)   biān = edge; whip; compile; bat; to pierce with a stone probe
(4)   fú = prop up; prisoner; fall; not; thus; bat; happiness; float

"In isolation, the syllable biān is ambiguous because of this homonymy. The same thing is true of the syllable fú. But the combination biānfú can mean only "bat." (Similarly yīfú can mean only clothing.) Although we can say that biānfú is the only "word" that colloquially means "bat," that is a bit misleading, for biān or fú alone can suffice if it happens to enter into another bisyllabic compound. Thus we can combine either element with "wing" yì to make biānyì or fúyì "bat wings." (Jordan 2006). Examples of polysemy in Chinese are: The word 'magazine' in Chinese 'zazhi' can refer to the physical object itself, the information in it or the publisher. Here the word has several related meanings.

(5)   "ta   shou   shang   na   le   ben   zazhi
         he   hand   on   hold   asp.   CL   magazine
         'He is holding one magazine in his hand'

(6)   women cong   zazhi   zhong   dedao xuduo baoguide ziliao
         we   from   magazine within   obtain   many   precious data
         'We have obtained a lot of precious data from magazines'

(7)   meiguo ge   da   zazhi   wubu   wakong   xinsi   zhengqu caifang jihui
         America every big   magazine do   dig-empty mind   fight for   interview chance
         'Major American Magazines fight for interview opportunities'."
         (Ahrens, Chang, Chen and Huang 1998, p.47)

Some problems also arise between the writing and spoken systems of Chinese. The writing system is independent of sounds, it is a generic system, so all dialects can use it, but equally it represents no particular dialect. Secondly, the two systems differ from each other as written Chinese does not have the same syntax as the spoken language where multiple syllables are 'critical to disambiguating homonyms' (Jordan 2006).

There is a separate morphology and grammar between what is read/written and what is spoken. The writing system is so different to the spoken system that what is written has to be 'translated' before it is spoken. This has presented dictionary writers of Chinese with a constantly changing and enlarging lexicon so Chinese lexicographers are faced with similar challenges to their English speaking counterparts when it comes to polysemy and homonymy. Ahrens, Chang, Chen & Huang (1998, p.59) suggest a model which links 'meaning facets' for dealing with ambiguity and vagueness and suggest a model for lexical entries:

> '[...] our account postulates multiple senses and structured ways of linking additional meaning facets to the senses so that the information is all listed in the representation, and therefore easier to access. Our proposal is to have not only the different senses of a word listed, but also its different meaning facets. We claim that there are conceptual or logical relationships between the facets and their senses[....]'

Their model is essentially user friendly and 'Conceptually it is as explanatory as a theory where all the meaning links are structurally represented'. (Ahrens, Chang, Chen & Huang 1998, p.59) They suggest an example of how this might work (8) – (9). In (10) we give an example of a word with four different senses, of which one has three different meaning facets.

(8) --**Sense1: MEIHUA** *plum flower*
          -- meaning facet1: *physical object: the blossom*
          -- meaning facet2: *the whole plant contains the blossom*
(9) --**Sense1: BAICAI** *Chinese cabbage*
          -- meaning facet1: *physical object: the vegetable*
          -- meaning facet2: *the cooked form of it*
(10) --**Sense1: TIAN** *sky* -- meaning facet1: *sky as a physical object (that can be viewed)*
          -- meaning facet2: *God/heaven*
          -- meaning facet3: *weather*
   --**Sense2: TIAN** *time*
   --**Sense3: TIAN** *day*
   --**Sense4 :TIAN** *nature*   (Ahrens, Chang, Chen & Huang 1998, p.53)

Their system for deciding on if a meaning is a sense or a meaning facet is derived from their theory that a meaning facet has three properties. These are: *"1) it can appear in the same context as other meaning facets, 2) it is an extension from a core sense or from another meaning facet (unless it is the core sense), 3) nouns of the same semantic classes will have similar sense extensions to related meaning facets. Individual senses, on the other hand, 1) cannot appear in the same context (unless the complexity is triggered), 2) have no core sense from which it is extended, or it is very hard to concisely define what the core sense would be, and 3) no logical/conceptual links can be established between two senses, nor can the link between two senses be inherited by class of nouns."* (Ahrens, Chang, Chen & Huang 1998 p53). By using their system they ensure that only one sense can occur in any given context.

2.2 Polysemy and homonymy in English

In this section, I will discuss polysemy and homonymy in English with particular reference to the polysemous preposition *over* . I will go on to discuss the idea of polysemous words being expressed in terms of image schemas and show how senses of

a particular word are linked in a structural way and how this should ease the task of the lexicographer. The polysemous proposition *over* appears in the Merriam-Webster Online dictionary as having 78 entries. The first five are expressed thus :

(11) Main Entry: [1]**over**

Pronunciation: `'O-v&r`
Function: *adverb*
Etymology: Middle English, adverb & preposition, from Old English *ofer;* akin to Old High German *ubar* (preposition) above, beyond, over, Latin *super,* Greek *hyper*
1 a : across a barrier or intervening space; *especially* **:** across the goal line in football **b :** forward beyond an edge or brink and often down <wandered too near the cliff and fell *over*> **c :** across the brim <soup boiled *over*> **d :** so as to bring the underside up <turned his cards *over*> **e :** from a vertical to a prone or inclined position <knocked the lamp *over*> **f :** from one person or side to another <hand it *over*> **g :** ACROSS <got his point *over*> **h :** to one's home <invite some friends *over*> **i :** on the other side of an intervening space <the next town *over*> **j :** to agreement or concord <won them *over*>
2 a (1) **:** beyond some quantity, limit, or norm often by a specified amount or to a specified degree <show ran a minute *over*> (2) **:** in an excessive manner **:** INORDINATELY **b :** till a later time (as the next day) **:** OVERNIGHT <stay *over*> <sleep *over*>
3 a : ABOVE **b :** so as to cover the whole surface <windows boarded *over*>
4 -- used on a two-way radio circuit to indicate that a message is complete and a reply is expected
5 a : THROUGH <read it *over*>; *also* **:** in an intensive or comprehensive manner **b :** once more **:** AGAIN <do it *over*

Source : http://www.m-w.com/dictionary/over

Language which displays polysemy can be expressed in terms of image schemas. According to Saeed (2003, p357), 'G. Lakoff (1987) uses the term **radical category** for the characteristic pattern produced by the metaphorical extension of meanings from a central origin'. Prepositions are an example of this in English. Topographical or containment approaches may be used in the description of polysemy of prepositions. The former approach can be taken in the following examples proffered by Brugman & Lakoff 1988, where the preposition *over* is explored :

(12) The plane is flying over the hill.
(13) Sam walked over the hill.
(14) The bird flew over the yard
(15) The bird flew over the hill.
(16) Sam lives over the hill.
(17) The painting is over the mantel.
(18) The board is over the hole
(19) She spread the tablecloth over the table.
(20) The city clouded over.
(21) The guards were posted all over the hill.
(22) Harry still hasn't gotten over his divorce

Saeed (2003, p.359) refers to a 'Path image schema' by way of illustration, using the term 'trajector' (TR) to refer to the 'moving entity' and the term 'landmark' (LM) to refer to 'the background against which movement occurs'. An example of how this Path schema might work is from Brugman and Lakoff (1988, p.482).

It shows the above-across sense of over as in (12a) from above:

(12a)   The plane is flying over the hill.
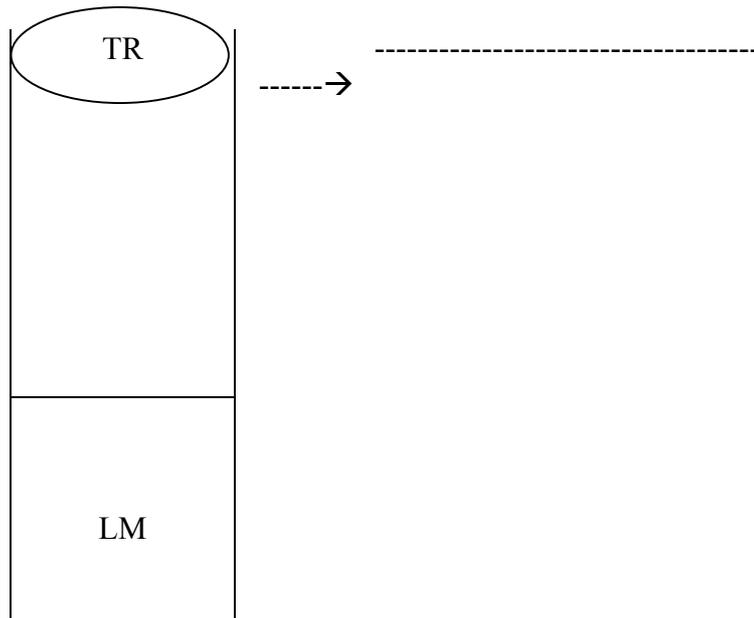
'The relationship between the different sense groups of over is structured and 'the processes which extend senses from a central prototype to form a radial category are systematic and widespread and not arbitrary' (Saeed 2003, p361).

3. Evans' Approach to the Polysemy of Time

In this section I will discuss Vyvyan Evan's treatment of *time* and how it is arranged in semantic memory and in particular his proposal for identifying *time* as a distinct sense and his conclusions about the lexicon having systematic semantic structure. Vyvyan Evans (2005) argues that 'time constitutes a lexical category of distinct senses instantiated in semantic memory' (Evans 2005, p. 33). He sees the senses of *time* organised into a network centred around a central sense which he calls the 'sanctioning sense'. The central sense interracts with structuring, conceptual processing and context to produce different senses associated with *time*. Similar to Saeed's view, Evans in his model, suggests that the lexicon is not arranged arbitrarily but in a structured system. He has devised three criteria for establishing what constitutes these distinct senses: a) a meaning criterion, b) an elaboration criterion, and c) a grammatical criterion. His approach is at odds with the generative approach of Pustejovsky (1995) who argues for 'a single meaning approach to polysemy'. The idea of a rule-governed lexicon can be linked to Chomsky who understands the lexicon 'in a traditional sense : as a list of "exceptions", whatever does not follow from general principles' (Jackendoff 1997, p4) also viewing the lexicon as 'a finite set of [discrete] memorised units of meaning'. However, this position cannot account for the fact that there is a systematic relation between some forms. Also it doesn't address the semantic complexity of even simple sentences nor is meaning finite as is suggested here. Evans believes that Pustejovsky's 1995 approach suggests an inaccurately over simplified representation of word meaning and his approach cannot be applied to complex abstract concepts like *time* as it is harder to relate *time* to something concrete in reality.

Evans takes a different approach which represents semantic meaning at the conceptual level. He says '[…], the fact that a lexeme such as *time* appears to be polysemous in linguistic terms follows from, and reflects, the way it is organised at the conceptual level'.(Evans 2005, p.36). Like Langacker (1987), Evans treats lexemes as 'points of access' (Langacker 1987) 'into a rich network of encyclopaedic meaning'.(Evans 2005, p.37) He regards the senses associated with a lexical item as a 'continuum of meaning', with the senses of the lexeme organised as a network around the central sense. While much work has been done on image-schema representations of, for example, polysemy of prepositions, much less has been done on a polysemous noun concept like *time.* Evans refers to 'principled polysemy' in which 'lexical concepts are treated as being mutable and dynamic in nature'. (Evans 2005, p.38) Principled polysemy recognises that not all senses of a lexeme (such as they are and such as they may change over time) 'are recognised by the language user as being related at the synchronic level' (Evans 2005) and this, he suggests, accounts for the polysemy of *time*. His principled polysemy approach suggests the senses of *time* are derived from a historical sense; synchronically the senses can be related semantically and also linked with the old historical senses. Evans proposes 'three criteria for determining whether a particular instance of 'time' counts as a distinct sense'. (Evans 2005, p.41) They are: a) Meaning criterion – whereby lexical concepts must have a distinct meaning; b) Concept Elaboration Criterion and c) Grammatical Criterion whereby lexical concept has distinct structural dependencies. His 'criteria for determining the appropriate Sanctioning Sense for *time* include linguistic evidence combined with empirical evidence, more specifically: 1) historically earliest attested meaning, 2) predominance in the semantic network, in the sense of type-frequency, 3) predictability regarding other senses, and 4) a sense which relates to lived human experience of time, i.e. experience at the phenomenological level. (Evans 2005, p44). An example of an earliest sense of time may be in relation to duration eg :

(23)   I recovered after a short time

A later sense that has developed in *time is running out* is often associated with disaster situations where rescue attempts are made and there is a finite length of *time* within which the rescue must take place. Here the sense has changed from duration to *time* being a finite sense. *Time* is now becoming an entity and this can been seen with the later usage *time is money*. It is now a valuable and finite entity. *Time* as a a commodity can now 'be bought and sold'. (Evans 2005, p47). While cognitive linguistic research shows that word senses are context dependent, context dependent senses are 'mutable' (Langacker 1987). Evans, however, focuses on the more 'stable' senses when discussing *time* and suggests that establishing generalised criteria for determining stable aspects will have to be developed along with how they combine with context in order to produce novel meanings. Evans concludes in agreement with Lakoff 1987 and Saeed 2003 that the lexicon is systematically structured. He employs three criteria to establish what constitutes a distinct sense. He also claims that there exists a certain 'redundancy' in the lexicon '*This […] is at odds with 'single-meaning' approaches to polysemy which posit highly underspecified lexical meta-entries, such as the derivational approach of Pustejovsky (1995)*' (Evans 2005, p.72).

In this section I have discussed Evans' treatment of *time*, the criteria he applies to an instance of time to discover if it is a distinct sense; the criteria he applies to find the appropriate 'Sanctioning Sense' for *time* and his conclusions that the lexicon is

arranged in semantic memory as a systematic structure. In terms of the job of the lexicographer, the arrangement of the written English lexicon would perhaps best serve the reader by reflecting the system found in semantic memory.

4. Conclusions

There is a grey area where concepts of polysemy and homonymy meet. When a word (eg old English wann) develops a new meaning it sometimes loses the old one or can end up having two contradictory meanings. There is no doubt that polysemy makes communication easier but then confusion can arise when senses shift. Dictionaries also differ in their decisions whether to list as word as a polysemous entry or as an homonymous one. George Lakoff's findings are based on the results of various researchers' studies on image-schematic analysis of French, for example, and research on prepositions (as we have seen in over). I agree with his suggestion that most research in these areas concludes the following:

(24) a. The word ***over*** and other examples in the research are polysemous and can't be represented by a single meaning that represents all the senses
b. Image schemas can be used to express these words
c. Image schemas provide a structure by which each sense of a meaning can be represented
d. The less obvious senses while not directly linked to the central sense provide a type of linked structure to the central meaning

When a polysemous word occurs in everyday communication, we have the ability to select the context-related meaning very rapidly. It would seem that the meaning chosen forms a part of a mental representation of what is going. Perhaps it is a result of using mental representations or schema to select the correct meaning. If two meanings fit the criteria, however, then ambiguity arises. Problems can also arise when two people's mental representations are not the same and this is possible where there are cultural differences say between a Chinese person speaking English and a native English speaker in conversation (where, for example, ideas of spatial configuration/image schemas differ). Misunderstanding can thus take place as people have different mental representations of what is being said. Ahrens, Chang, Chen & Huang's model for dealing with lexical ambiguity and vagueness offers one solution to the problem and allows for a simplified organisation of lexical entries. Evans suggests that the polysemous noun '*time* constitutes a lexical category of distinct senses instantiated in semantic memory' (Evans 2005, p.33) The senses associated with time interact between a central Sanctioning Sense, conceptual processing, structuring and context. 'Hence, semantic representations, cognitive mechanisms, and situated language use are appealed to in accounting for the polysemy associated with time' (Evans 2005 p33) The model he uses is principled polysemy and concludes that the lexicon is not an arbitrary collection of unrelated lexemes but rather a complex organised system of senses in the semantic memory. While earlier examples of polysemy in this paper included the preposition 'over', an examination of the lexeme *time* shows that *time* as an abstract concept is a member of a very different type of lexical class and its polysemous nature shows sytematicity between its senses. Thus, it is fair to conclude as I began that '[….] human language is so vague and ambiguous that only a very clever mind could possibly understand it' (Miller 2001) and clearly more work is required before such complex issues as homonymy and polysemy are clearly and unambiguously resolved.

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