A Cognitive Study of the Non-phrasal Senses of the Verb (to break)

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ABSTRACT

The major part of this research is on a theoretical cognitive analysis of the senses of the verb "to break" and their relations. Basically, it is an attempt to apply the polysemy model to this verb. According to this model, certain verbs, nouns, adjectives, or prepositions might have distinct senses but are systematically interrelated and related to each other. The secondary senses emerge from the central ones. Relatedness of senses (the central and secondary ones) is either direct or indirect through cognitive–semantic realizations such as metaphorical extension, metonymy, generalization, specialization, and chaining. These cognitive–semantic realizations constitute a radial systematic network within the senses of the polysemous word.

1. Introduction

Most researchers of English think of the verb "to break" as a simple verb and whose central sense is "to separate or turn something into pieces". Sometimes it is not an easy task for the native speakers of English to distinct between the central senses and the non-central (secondary) ones of this verb.

The main important aim of this paper is to give a clear picture of the senses of the verb "to break" and how they function in the polysemy model which is a cognitive approach initiated by Tyler and Evans (2003).
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In this research, it is assumed that the verb "to break" has central and non-central (secondary) senses, and all non-central (secondary) senses are interrelated and related to the central ones forming a radial systematic network (Tyler and Evans, 2003: 237)

This research is restricted to a sentence level. The non-phrasal senses rather than phrasal senses of the verb "to break" are tackled. (27) senses of the verb "to break" are covered in a theoretical cognitive analysis. The senses of the verb "to break" and the examples are picked up from dictionaries only which are:


Cognition is the scientific term for "the process of thought". Its usage varies in different ways according to different disciplines: such as, psychology, linguistics, philosophy, neurology and other sciences. In short, the cognitive approach seeks to understand the mental representations and processes underlying creative thought (Croft and Cruse, 2004: 3). As for cognitive linguistics, Trask (1999: 25) defines it as an approach which deals with the study of language which on the basis of human perception and conceptualization (or conceptual systems) of the world. According to Croft and Cruse (2004: 3), cognitive linguistics argues that language is governed by general cognitive principle, rather than by a special – purpose language module.

Through a growing number of psychological studies which shed new light on human cognition in 1970s, the field of semantics has developed to involve cognition-oriented approaches to semantic representation of lexicon and grammar, especially lexical semantics and cognitive semantics (see Lakoff and Jonhson, 1980;
Lakoff, 1987; Lakoff and Turner, 1989; Gibbs, 1994; Rakova, 2003; Tyler and Evans, 2003; Croft and Cruse, 2004; Evans and Green, 2006; Geeraerts, 2006; Geeraerts and Cuyckens, 2007, among others).

With the birth of cognitive semantics, new ideas have emerged that study the meaning changes such as the bodily basis of meaning, conceptual structure, categorization, mental spaces, image schemas and mapping and others, and one of the major things in which cognitive linguistics is interested is polysemy (Evans and Green, 2006: 156-70). The study of polysemy, or of the "multiplicity of meanings" of words, has a long history in the philosophy of language, linguistics, psychology, and literature.

2. Polysemy

Etymologically speaking, the term "polysemy" comes from the Greek words "poly" which means "many", and "semy" which means "meaning"; consequently the two words "poly"and "semy" put together mean "multiple meaning" or "many meanings" (Burrow, 1984: 244).

From the semantic point of view, the term "polysemy" is defined by many linguistics dictionaries as "the variety of meaning". Traditionally, the most common definition of the term "polysemy" is "a word which has several meanings" (Hartman and Stork, 1973: 179; Lyons, 1981: 550, 146; Palmer, 1981: 101; Richard and et al., 1992: 282; Crystal, 1994: 267). In cognitive linguistics, there is the same view in the definition of polysemy, but cognitive linguists expand it to cover the relation of its senses to each other, and even they divide polysemy into different categories such as: "principled polysemy" (Tyler and Evans, 2003), "inter-categorical polysemy" (Zawada, 2005: 128), "systematic polysemy" and "constructional polysemy" (Copestake and Briscoe, 1995: 15), and "regular polysemy " (Kilgarrif and Gazdar, 1993: 1). All these categories of polysemy share the same principle in which a word has distinct but related senses.
3. The Nature of Senses within a Polyseymous Word

Traditionally, there are no details on the construction or formation of senses of the polyseymous word, the factors that make a word polyseymous, how and on what bases the senses of a polyseymous word are interrelated and related to each other. The traditionalists are content with a polyseymous word that has distinct but related senses. Cognitive linguists focus on the analysis of the processes realizations that motivate a word to be polyseymous (Lakoff, 1987: 123; Gibbs, 1994:157).

Boers and Demecheeleer (1998: 197) state that a polyseymous word has central (literal) and secondary (figurative) senses; the secondary senses are extended (derived) from the central ones. Fazly, et al. (2005: 3) state that the polyseymous verb, such as "to give" has literal and figurative senses: "to give a book" and "to give a present" are literal usage, whereas "to give a speech" and "to give permission" are figurative usage, and "give a pull" and "give a dust" are more figurative than the former ones, and so on.

In cognitive linguistics, polysemy is regarded as a categorizing phenomenon; i.e., related senses of words form categories centering around the prototype (the central sense) and bearing family resemblance relations (secondary senses) to one another systematically (Lakoff, 1987: 12-3; Gibbs, 1994: 157). Some contemporary cognitive linguists such as Tyler and Evans (2003: 237) adopt the principled polysemy as a new model working on the polyseymous words in cognitive semantics. According to the principled polysemy model, the links between the senses of a polyseymous word are not arbitrary but rather principled, systematic, and recurrent, and arise naturally within the cognitive system such as metaphor, metonymy, generalization and specialization. Geeraerts (2006: 109) states that some of the links may involve shared information, some may involve the relation between a general and a specific case, and some may be metaphoric and others may be metonymic. Generally, this view forms a radial systematic network through cognitive-semantic realizations. These realizations...
make direct and/or indirect relatedness between senses of a polysemous word. On that view, the "radial" structure or network occurs when the non-central senses come from the central one(s), and each non-central sense is either a variant of the central sense or is a variant on a variant in the polysemous word, see Figure (1). In addition, Evans and Green (2006: 331) mention that the more direct relation senses are "closer" to the central sense(s), while less direct relation senses are "further from" the central one(s).

Figure (1)
A Sample for the Radial Network of Senses
(Evans and Green, 2006: 332)
4. Cognitive – semantic Realizations

There are five cognitive-semantic realizations that motivate the extensions of senses in the radial network; these realizations are: metaphor, metonymy, generalizations, specialization, and chaining.

4.1 Metaphor:

Lakoff and Johnson (1980: 5, 36) define metaphor as the understanding and experiencing of one kind of thing in terms of another. Metaphor is principally a way of conceiving one thing in terms of another, and its primary function is understanding. As for the systematicity of metaphorical concepts, Lakoff and Johnson (Ibid: 4, 7) mention that metaphorical expressions are not arbitrary; they are related to physical and cultural experience. For example, Zawada (2005: 131) shows that the word "school" as a noun can be extended to a metaphorical sense "a group of fish", where the notion of a large group of small things together "as children in a school" is transferred to a large group of fish together.

4.2. Metonymy:

Metonymy is defined as entity being used to refer to another. Its essential function is referential, in other words, using one entity to stand for another one (Lakoff and Johnson, 1980: 36). Like metaphorical concepts (senses), metonymic ones are not random or arbitrary occurrences; they are systematic in terms of conceptualization of one thing by means of its relation to something else (Ibid: 39). For example, a metonymic extension (based on physical contiguity) functions between the various senses of "school" that refer to "building" "lessons", and "pupils" respectively (Zawada, 2005: 131).
4.3. Generalization:

Generalization is a cognitive-semantic realization whereby a word is used in a broader realm of a sense that it originally possessed, often refers to all items in a class, rather than one specific item. For example, some of the sense-extensions of "school" are "learning institution" and "group of people sharing opinions" based on generalization (Ibid, 2005:132).

4.4. Specialization:

Specialization is a cognitive-semantic realization whereby the sense of a word is narrowed down to more specific sense. For example, the sense of "school" as "learning institution" is narrowed down to "one specific course" by means of specialization (Ibid, 2005: 132).

4.5. Chaining:

Chaining is another realization by which the various senses of a polysemous word consist of various related senses, but these senses are not based on a unified common sense. Chaining occurs when central sense(s) are linked to other senses, which are linked to other senses, and so on. For example, sense (1) is related to sense (2) based on some shared attribute, sense (2) is related to sense (3) based on some shared attribute, but sense (1) and (3) have nothing in common or not strictly related to each other (Lakoff, 1987: 95; Evans and Green, 2006: 333). Particularly, this case occurs when the word does not occur within one and the same syntactic category or word class, for example, the word "school" has a sense "building" as a noun and "to train a horse" as a verb have an indirect or weak relation to one another as in Figure (2) (Zawada, 2005: 132).
5. A Theoretical Cognitive Analysis of the Verb "to break"

There are two central (prototypical) senses for the verb "to break": "to separate something into two more pieces, and to destroy something into two or more pieces". These two central senses are interrelated and related to each other. In this case, separation leads to destruction, and destruction leads to separation, since the other non-central (secondary) senses emerge from the general central senses separation and destruction. From this sense, the general central-cognitive concepts (senses) of the verb "to break" can be realized as separation and destruction.
Generally speaking, the non-central (secondary) senses of the verb "to break" are of two types according to their relations to the general cognitive concepts "senses" (represented by 1): direct (represented by 2) and indirect (represented by 3) relations. The direct relations hold when the senses are the closest to the general cognitive ones, but the indirect relations obtain when the senses are the farthest. According to my cognitive viewpoint, the indirect relation senses are divided into five sub-categories.

1. General or central senses (separation and/or destruction)
2. Direct and indirect relations to the general or central senses
3. The indirect relation are divided into:
   3A. Discontinuation of the action
   3B. Coming into sight
   3C. Weakness
   3D. Failure
   3E. Change

For more details about how the senses of the verb (to break) are organized, see Figure (3).

5.1. Senses related directly to separation and/or destruction

- To smash (a vase)
  1. She dropped the vase onto the floor and it broke.
     (Hornby, A. S., 2000:14)
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The concepts of separation and/or destruction are clear in (1), where "the vase" was separated and/or destroyed into pieces because of dropping onto the floor.

- To fracture (a bone)
  2. He broke my leg.
  (Ba'albaki, 2003: 126)
  This example illustrates that there is a fracture in the bone of a foot. Hence, a fracture is the cracking or separating of the bone into pieces or more.

- To divide (books)
  3. He broke the set of books into three groups.
  (Ba'albaki, 2003: 126)
  The verb "to break" in (3) has a sense of division of a group of related items. In short, "the set of books" as one unit becomes three sub-units "groups" as a result of separation.

- To scatter (the balls)
  4. He broke the balls by the cue.
  (Longman Dictionary of Contemporary English, 1978: 120)
  In billiards, the balls are in the form of triangle before starting the first shot. These balls with each other represent one unit, but they separate after the opening shot.

- To exchange (money)
  5. I had to break a $100 bill just to buy the candy.
  (Longman Dictionary of Contemporary English, 1978: 120)
  "To break" means "to exchange money", from a big unit into smaller units, for example a dollar into cents. So, one coin or note money becomes small monetary units "pieces" because of the separation of a big monetary unit.

- To disperse (clouds)
6. The clouds broke and the storm came out. (Hornby, A. S. 2000: 14)

In (6), one big cloud becomes small clouds, and each small cloud is separated from the big one, going in different directions. Small clouds make openings "spaces" among them. From this sense, the general concept of separation is realized through spreading the small clouds here and there in the sky.

- To cultivate (the soil)

7. The peasant broke the soil. (Ba'albaki, 2003: 126)

Cultivation is the turning the soil inside out. Consequently, this process causes the decomposition or disunion in the surface of the soil whose grains are separated into different directions.

- To detach (something from something else)

8. The boy broke a twig from the tree. (Ba'albaki, 2003: 126)

"A twig" is out of "the tree" as a result of the separation from each other. In this sense, one unit "the tree" becomes two units "a twig" and "the tree".

- To scrape (the skin)

9. The dog has bitten didn't break the skin. (Hornby, A. S., 2000: 141)

"Scraping or cutting the surface of the skin and making it bleed" is the sense of "to break" in (9). This case causes a wound which in simple words can be defined as "tearing or ripping" part the soft tissues of the skin. Hence, destruction and/or separation of the tissues from each other are caused.
5.2. Senses related indirectly to separation and/or destruction

5.2.1. Separation and/or destruction cause "discontinuity of the action"

- To stop working (the engine)
  10. The engine finally broke.
  (Ba'albaki, 2003: 126)
  To stop working or stop operating in the engine as a result of one or more damaged parts inside the engine, or the disconnection of the mechanical or non-mechanical parts from each other. For example, the damage of pistons or oil pump, or disconnecting "separating" gears from each other causes the engine to stop working.

- To end (a relationship)
  11. He broke all links with the communist party.
  (Hornby, A. S., 2000: 141)
  Members of a certain political or non-political party form one unit. When one of them ceases his membership, he becomes unrelated to that party, as a result of the process of separation.

- To end (a strike)
  12. Management has not succeeded in breaking the strike.
  (Hornby, A. S., 2000: 141)
  The strength of a strike usually falls into the unity of the members, for example, workers, students lawyers, etc. with each other. When those members are separated from each other by force or agreement between for example; workers and factory management, the strike loses its strength and it ends finally. In
short, separation is achieved when "everyone goes to a different direction which leads to discontinuing the action".

- To interrupt (a conversation)
  13. John broke their conversation.
  (Ba'albaki, 2003: 126)

  "To break" has a sense of "interruption". When two people are talking to each other, and someone interrupts or cuts their conversation, the two people become separated from each other for the discontinuation of series of their words or thoughts.

- To stop (for a short time)
  14. We'll break for coffee at ten o'clock.
  (Ba'albaki, 2003: 126)

  To stop for a short time as a result of separation of doing something such as studying, playing, walking, etc. into two parts. In other words, drinking coffee separates the action into two parts what is before having coffee, and after. Hence, to discontinue the action "having coffee" is achieved by stopping for a short time.

- To diminish abruptly (the fever)
  15. The patient's fever broke last night.
  (Longman Dictionary of Contemporary English, 1978: 120)

  To put an end to fever requires overcoming the factors that make a fever continue. The sense here the discontinuity of a fever as a result the destruction of the germs or viruses which cause high temperature to the patient.

- To give up (a habit)
  16. They managed to break themselves of smoking.
  (Ba'albaki, 2003: 126)

  "To stop for a certain time through working or doing an activity" is the general sense of the verb "to break" in (16). Before
giving up a habit, "they" and "smoking" were represented as one unit, but after giving up the habit, "they" and "smoking" become away from each other. Consequently, stopping or giving up smoking results from separating "they/smokers" and "smoking" from each other.

- To dissolve (the waves)

17. The waves were breaking along the shore.

(Longman Dictionary of Contemporary English, 1978: 120)

If waves of the sea break, they reach their highest point and start to fall. The sense of "to break" in (17) is "dissolving of waves after crashing into surf"; hence, the ending of a wave as a result of collapse or crash into surf. Finally, the wave becomes a great number of drops of water because of the separation of the drops themselves from each other.

5.2.2. Separation and/or destruction cause "coming into sight"

- To start (a day, dawn, storm)

18. The day broke hot and sultry.

(Longman Dictionary of Contemporary English, 1978: 120)

In (18), "to break" means "to start and come into sight". The beginning of a new day is as a result of a separation between the light represented by morning, and the darkness represented by the night.

- To emerge (the whales)

19. The whales broke.

(Hornby, A. S., 2000: 141)

"Appearing or coming from somewhere" is the sense of the verb "to break" in (19). The whales emerge or appear from water as
a result of their separation from the surface of water. Thus separating or emerging of whales from water causes the whales to come into sight.

- To escape (from the prison)

  20. He spent three years in prison before he broke.
  
  (Hornby, A. S., 2000: 141)

  In (20) "to break" has a sense "to escape or to run away". Sometimes, escaping from the prison causes concrete things of the prison to be destroyed such as doors, windows, walls, bars, etc. by the prisoners themselves. After all, escaping from prison makes moving out or separating which causes the prisoners to come into sight.

5.2.3. Separation and /or destruction cause "weakness"

- To beat (the enemy)

  21. We broke the enemy at the battle of Harlow Fields.

  (Longman Dictionary of Contemporary English, 1978: 120)

  "To break" means "to defeat" in (21). Victory is fulfilled through members of the army supporting one another, so those members constitute one unit. This unit "the army" can be defeated if its members are separated from each other causing "gaps in their lines" by the destruction of their equipment and materials such as wire or wireless sets, tanks, guns, etc. Accordingly, the army becomes weak and falls into confusion and flees.

- To weaken (the morale)

  22. The scandal broke him.

  (Hornby, A. S., 2000: 141)

  "To break" has a sense of "to ruin somebody's reputation and destroy his confidence. "Morale is destroyed under the effect of the
scandal. A person may have good reputation and confidence before the scandal, but after the scandal, the reputation and confidence become separated and away from him. Hence, he will be weak and in bad condition because of losing of confidence and morale.

- **To ruin (financially)**
  23. They threatened to break him if he didn't stop discounting their products.
  
  (Hornby, A. S., 2000: 141)

  Generally speaking, one becomes bankrupted when he loses his money directly because of theft, or destroying his belongings such as houses, buildings, cars, etc. Thus, the loss of money makes the owner weak from the financial viewpoint.

### 5.2.4. Separation and/or destruction cause "Failure"

- **To fail to conform to (the law)**
  24. He was breaking the speed limit.
  
  (Hornby, A. S., 2000: 141)

  In (24), "breaking" means "traveling faster than the law allows". The concept of separation of the verb "to break" can be imagined by the loss of the capacity to conform to the speed limit rule in a definite period. In other words, there is no agreement or adjustment between the driver's mind and compliance with the speed limit rule. This gap between the two sides "the driver" and "the rule" causes a failure in putting the rule into effect.

- **To fail to keep (the appointment)**
  25. He broke the appointment.
  
  (Hornby, A. S., 2000: 141)

  An appointment means an agreement to see somebody at a particular time. In this case, there is a connection between two people or more. The two people seem one unit if the appointment is
achieved. And separation is a result of failure to keep the appointment between two people or more.

5.2.5. Separation and/or destruction cause "change"

- To change to (a definite direction)

  26. The quarterback broke to the left to avoid a tackler.

  (Hornby, A. S., 2000: 141)

  "To break" has a sense of "to move to another different direction" in (26). So it is a change of the position and direction due to the separation of the quarterback from the position, and taking the left (i.e. different) direction. From this sense, the player can not move to a different position unless he separates from the position itself.

- To tame/train (a horse)

  27. The horse was tough to break.

  (Hornby, A. S., 2000: 141)

  In (27), "To break" has a sense of "to train or to discipline the horse". It is a process of changing the actions of the horse from disobedience into obedience. So, it is the destruction of disobedience that the horse has, to reduce the horse to a subject for doing something. In other words, to train or to discipline the horse is changing the actions of the horse that result from the destruction of the old actions represented by "disobedience", and separating them from the recent or new actions represented by "obedience".
6. Conclusion

Through this study, the verb "to break" as a multiple-sense verb has about 50 non-phrasal senses. But only the 27 common senses have been analysed since the others have the same analysis and interpretation to the common senses. Generally speaking, The verb "to break" bears the central (literal or prototypical) senses "to separate and/or destroy"; the other extended (secondary) ones that are analysed are interrelated and related to the central sense(s). Some secondary senses are related directly to the central sense(s), but others indirectly to the central one(s). In other words, the degree of relatedness of the extended (secondary or figurative) senses to the central ones is different from one sense to another; that is, the more closer a secondary sense is, the more related it is to the central senses. The relations of the 27 senses of the verb "to break" are built systematically together forming a radial systematic network through the five cognitive-semantic realizations, metaphor, metonymy, generalization, specialization, and chaining. Consequently, the verb (to break) can be a good sample for the systematic polysemy model.

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دراسة إدراكية للمعاني غير اصطلاحية للفعل (to break)
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المستخلص

يشمل الجزء الرئيسي لهذا البحث تحليلاً إدراكيًا نظريًا لمعاني الفعل (to break - يحطم). العلاقة التي تربط بينهما. من هنا هذا البحث بشكل أساسي محاولة لتطبيق آليات الاشتراك اللغوي على الفعل. وفقا对该 الآليات، هناك أفعال وأسماء وصفات جرب معينة لها معاني مختلفة ولكن هذه المعاني مرتبطة ومندروة مع بعضها البعض بصورة متسنة. وتتفق المعاني الثنائية من المعاني الرئيسية. ويكون ترابط المعاني (الرئيسية والثانية) مع بعضها البعض أما مباشرة أو غير مباشرة من خلال الادراك الدلالي مثل التوسع المجازي والكتابة والتعميم والتخصيص والسلسلة.
وتشكل هذه العمليات الدلالية الإدراكية شبكة منظمة ومتفرعة من المعاني لكلمة ذات المشترك اللغوي.