Frame Semantics, Idealized Models, and Category Structure

Heechul Lee

(Chonbuk National University)

Lee, Heechul. 1999. **Frame Semantics, Idealized Models, and Category Structure**. *Linguistics*, 7-1, 127-138. Jackendoff (1989) contains an analysis of the meaning of the verb *climb* in terms of preference rules. In such an analysis, we can define a given use of a word as more 'prototypical' if more of the "preference rules" are satisfied in the situation in which the word is used. In his two frame semantics articles, Fillmore (1982, 1985) suggests another analysis of 'prototype effects' of the kind Rosch (1981) studies. The question in part of this paper is, what would be the analysis of *climb* in a frame semantics approach? How does it account for the relative prototypicality of the uses of the word *climb*?

The point of another part of this paper is to help people understand the category better. It takes an idealized model and define *rape* with respect to this model as Sweetser (1987) did for *lie*. Sweetser's (1987) article shows an example of a concept being defined relative to an idealized model, namely, the concept of lying. Sweetser (1987) maintains that modifiers of the noun *lie* are typically used to indicate that some of the conditions which hold of the idealized model do not hold of the situation under discussion. Part of this paper attempts to provide a similar analysis for *rape*. (Chonbuk National University)

1. Analysis of *Climb*

Before beginning to analyze the use of category *climb*, let us briefly review frame semantics.

1.1 Introduction to Frame Semantics

According to Fillmore (1982, 111), the frame in frame semantics is defined as any system of concepts related in such a way that to understand any one of them you have to understand the whole structure in which it fits; when one of the things in such a structure is introduced into a text, or into a conversation, all of the others are automatically made available. Let us consider the words, *land* and *ground*. Both *land* and *ground* designate the dry surface of the earth. It, however, is not the complete meaning of the words. *Land* designates the dry surface of the earth as it is distinct from *sea* whereas *ground* designates the same thing as it is distinct from the *air* above it. The words, *land* and *ground* differ not so much in what it is they can be used to identify, as in how they situate the thing in a larger frame. Therefore, a bird that spends its life on the *land* is a bird that does not spend any time in water. On the other hand, a bird that spends its life on the *ground* is a bird that does not fly.

The words, *shore* and *coast*, can be understood more thoroughly in terms of frame semantics. Both words designate the boundary between land and water. It, however, is not all of what they mean. The *shore* is the boundary between land and water from the water's point of view whereas the *coast* is the boundary between land and water from the land's point of view. Therefore, when we go to the beach for our summer vacation and are getting close to it, we say, "We will soon reach the *coast*." When fishermen come back to the port and are getting close to it, they say, "We will soon reach the *shore*." Similarly, a trip that took four hours *from shore to shore* is a trip across a body of water. On the contrary, a trip that took four hours *from coast to coast* is a trip across a land mass.

1.2 Analysis of *climb*

A word evokes a frame and the frame structures the word-meaning. (Fillmore, 1982) A frame is a system of categories in accordance with motivating contexts. (J.P. Koenig, 1994) The frame of *climb* is as

follows:

1) Agent of climbing (person capable of movement)
2) Change of position to a goal (from present lower position to future higher one)
3) Accompanying physical effort or struggle including clinging or clambering

The examples of the situation of *climb* in the real world are as follows:

4) He climbed (up) the rope.
5) He climbed down the tree.
6) He climbed down into the well.
7) The bear climbed (up) the tree.
8) The ivy climbed (up) the wall.
9) The snake climbed (up) the tree.
10) The plane climbed to a higher altitude.

The frame of climb fits the situation in sentence 4) so that *climb* in 4) is the prototypical use. When a goal condition (from present lower position to future higher one) is not met so that a situation is less prototypical as in sentences 5) and 6), *climb* is obligatorily followed by *down*. The effect is that being less prototypical is compensated for by *down* which specifies that the actual situation is the other way around for the goal element of the frame.

In sentence 7), part of the frame, namely, the goal and clambering elements fit the situation even though the agent of climbing is not a person. The bear is capable of movement, though. In 9) at least the goal in the frame fits the situation though the snake does not seem to have a clambering property, not to mention the person condition. It is capable of movement, though. *Climb* in sentence 8) is of far less prototypical use. Only the goal condition in the frame fits the situation.

The ivy has neither the person nor the clambering element of the frame of *climb*. It may have a clinging property. It is growing, though. Among the above sentences is sentence 10) of the least prototypical use of *climb*. The goal condition alone in the frame fits the situation. Sentence 10) seems to show a rather figurative device.

1.3 Further analysis of *climb*

At this point, we might question what difference they make empirically, especially in the case of a rather simpler frame like *climb*. There are some potential differences in the definition of *climb* itself. The notion of background condition is relevant for frame semantics, not for preference rules: in the case of preference rules, the meaning stops when you identify the object via the rules. In the case of Fillmore's (1982) frame semantics, the evoked frame is a large, potentially, non-finite, body of knowledge. The notion of gravity may be relevant. Two examples are as follows (the first one might be odd to some of you; the crucial point is that it is better than the second example):

11) The plane climbed into the sky.
12) ??The spacecraft climbed into Jupiter's orbit.

Sentence 12) is odder than sentence 11), because we expect the gravitational force to go in the other direction (the sentence is much better if the spacecraft goes into the other direction, like *climbed out of orbit*). Another good example of a complex background condition may be exemplified in the following examples:

13) She climbed down the mountain.
14) ??He climbed down the stairs to go to the cellar.

Example 14) seems worse than example 13), because when you climbed down a mountain, you must have climbed it, but not so with stairs

(other factors might be involved: difficulty of clambering......, orientation of body and face might still be upward looking......). What these added examples show is that the background against *climb* is defined in a complex kind of scene involving a large body of knowledge about humans and their activities.

1.4 Some more remarks

There is in fact no substantial difference between Jackendoff's (1989) and Fillmore's (1982, 1985) approach. At first blush, frame semantics and Jackendoff's style analysis are very similar: Jackendoff would say that the definition of *breakfast* in Fillmore (1982) is three preference rules, two of which at least have to be met for a felicitous use of *breakfast*.

Fillmore's (1982) frame semantics approach assumes that with each word a complex knowledge structure he calls a frame is evoked. The frame is defined in terms of "prototypes", i.e. in terms of simplified, idealized world structure. Real situations, of course, are not idealized, so that the application of the frame evoked by the word to the situation in which the word is used might not be perfect, giving rise to what Rosch (1981) calls "prototype effects". In other words, prototypicality in Fillmore's (1982) frame semantics is not directly reflected in the definition of the meaning (by weighted preference rules), but arises out of the relation between an idealized frame and actual non-idealized situations.

2. Analysis of Category Rape

Let us briefly review idealized models and category structure with respect to Sweetser's (1987) definition of *lie*.

2.1 Introduction to Idealized Models and Category Structure

Lexical categories can have more representative (central) or less representative (peripheral) members. Kay and McDaniel (1987) have shown that color categories lack necessary and sufficient conditions as opposed to what a classical or objectivist theory of categorization claims. "We define the best instance of a word's use, and expect real world cases to fit this best example more or less, rather than perfectly or not at all." (Sweetser, 1987, 43) Having the Sweetser's article in mind, category *rape* is discussed in the following.

In the definition of lie, in terms of idealized models and category structure, Sweetser (1987) discusses an Idealized Cognitive Model for *lie*. In the ICM, *lie* is defined as a false statement. In the ICM of informational exchange, 1) conversations are informational, 2) a speaker knows about what he is talking about, and 3) try to help, information is helpful. Our model of knowledge and information derives 15,c), which shows how beliefs are knowledge, from 15,a) and 15,b), as follows:

15) a. Beliefs have adequate justification.
b. Adequately justified beliefs are knowledge (= are true)
c. Therefore, beliefs are true. (= are knowledge) (Sweetser, 1987, 41)

Coleman and Kay (1981) proposed three components of a prototype definition of *lie* (cited in Sweetser, 1987, 48), as follows:

16) a. Speaker believes statement to be false.
b. Speaker said it with intent to deceive.
c. The statement is false in fact.

If we assume both a folk model of evidence in which a speaker's belief constitutes evidence of truth and a model of discourse as informational, then we find that a factually fault statement must be known to be false by the speaker, and (if made) must be intended to induce a false belief and thus to deceive (Sweetser, 1987, 48). 16,c)

above among the three conditions of a prototypical *lie* entails the other two conditions 16,a) and 16,b). Therefore, a lie is a false statement made in a simplified informational-exchange setting. The prototypical lie seems to be dependent upon the context, rather than the definition itself. English has false nonlies, or justified lies. These words mark deviations from the simplified world of the cultural model.

It is also useful to think of P. Kay's notion of an expert-based definition to distinguish between legal definitions of rape and folk/colloquial definitions of rape.

2.2 Idealized Models for Rape

Conditions of normal or socially accepted sexual intercourse in the ICM are as follows:

17) a. Both parties agree to make love WITH each other of their own volition.
   b. The sexual intercourse is between a male and a female. A male plays a leading role (are more active) in making love with each other.
   c. Both parties are adults.
   d. Both parties have a relationship appropriate for having culturally acceptable sexual intercourse.
   e. The sexual intercourse is performed with a manhood on one party and a vaginal orifice (womanhood is not a counterpart of manhood. I would be glad if I could find a more elegant word for it.) on the other party.

The conditions or properties which characterize prototypical rapes are as follows:

18) a. One party forces the other party to have a sexual intercourse.
   b. A male is the person who actively committed a sexual

intercourse.
c. Both parties do not have a relationship between them.
d. The sexual intercourse is performed with a manhood on one party and a vaginal orifice on the other party.

If we include a condition on the category *rape* to the effect that the victim is an adult, this suggests that raping a child is either less of a rape or less of a prototypical rape than raping an adult. I do not think that native speakers' intuition would agree to this consequence. The solution to this difficulty is that age is not relevant to the folk category of rape, but only to the legal, expert model of rape, where consent is defined relative to the age where a person is legally "free" to make choices.

In the ICM, rape is a forced sexual intercourse. The other conditions are automatically drawn from the normal sexual intercourse in the ICM. In other words, in terms of the different weights of the various conditions, the without consent/forced condition is more important than any of the others. All the conditions above 18,a) - 18,d) are met for a prototypical member of category *rape*. When rape is defined as a forced sexual intercourse, the prototype seems to be in the context, rather than in the definition itself. Examining the deviation may elucidate the model. Some peripheral members of category *rape* are examined in the following section.

2.3 Analysis of Some Peripheral Members of Category *Rape*

Let us investigate some kinds of rape which have modifiers and which are considered to be the peripheral members of category *rape*.

2.3.1 Date rape

A date rape is a rape in which both parties have some relationship, namely, a dating relationship in addition to conditions 17,a), 17,b), 17,c),

and 17,e) met. In an idealized model of rape, both parties do not have a relationship between them or they do not know each other.

An interesting way of thinking of date rape is in terms of scenarios: people have stored some scenarios (i.e. abstract representation of typical sequences of action) whose final scene includes sexual intercourse (being married, courting, being on a date). Part of the specific difficulty of convincing some people that date rapes are rapes might be due to their mistaken belief that acceptance of the beginning of a scenario entails accepting the entire scenario, including its final "scene", sexual intercourse. In other words, consent is understood as consent to the whole scenario, not its individual parts.

2.3.2 Acquaintance rape

An acquaintance rape is a rape in which both parties know each other, but they do not have such a relationship as dating. The difference between date rapes and acquaintance rapes is the degree of closeness in the relationship between both parties.

2.3.3   Statutory rape

A statutory rape is a rape in which at least one party (usually a female) is under the age of 18. (The age varies according to the state in America) In an idealized model of a culturally acceptable sexual intercourse, both parties are adults. All kinds of rapes are a forced sexual intercourse regardless of modifiers of noun *rape*. Even though both parties agreed to make love to each other, their sexual behavior is considered a statutory rape if at least one party (usually female in this case) is under 18. People under 18 are not considered to have an ability to decide on their sexual behavior. Therefore, they are regarded as having a forced sexual intercourse even though they may have apparently agreed to make love.

Cases of statutory rape can be defined relative to the idealized model

where consent is defined LEGALLY, i.e. with respect to the age of legal autonomy (where legal consent can be given). The difference between the expert and folk model, in this analysis, lies in the definition of consent.

2.3.4 Marital rape

A marital (spouse) rape is a rape in which both parties are in a spouse relationship. (condition 17,d) This kind of rape reminds me of a Lorena Babbit (if I remember the spelling correctly) case in which a wife (Lorena) cut part of her husband's manhood in a way of rejecting his attempt at a sexual intercourse with her against her will. Lorena was acquitted at the end of the trial. The concept of marital rape is relatively a recent one and varies according to the state in America. In some cultures, people think that a wife is considered to have promised explicitly or implicitly by marriage to give her body to her husband any time he wants. In those cultures, the concept of marital rape does not exist at all.

3. Conclusion

As seen in section 1, frame semantics enables us to understand the meaning of a word more clearly by offering a particular way of looking at word meanings. We have seen that the background context is absolutely essential to understanding categories. The frame in frame semantics structures the word meanings, and the word *evokes* the frame. It is also interesting to investigate the meaning of *climb* and, furthermore, some sentences containing the verb.

Section 2, on the other hand, shows us that idealized models and category structure help us to clearly define various types of sex-related activities. We have seen that age is not relevant to the folk category of rape, but that it is relevant to the legal, expert model of rape. In the legal or expert model of rape, consent is defined relative to the age at

which a person is legally "free" to make choices. The difference between the expert and folk model lies in the definition of consent.

Sexual harrassment, incest, sodomy, molestation, bestiality are also possible peripheral members of category *rape*. Thomason (1983, cited in Sweetser, 1987, 55) claims that some lies are non-reprehensible. All kinds of rapes are, however, reprehensible.

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Dept. of English Language and Literature
Chonbuk National University
1-Ga Dukjin-Dong
Chonju 561-756, Chonbuk
Korea
E-mail: chul61@hotmail