

# The Polysemy Networks of *over*

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Yoon, So Yeon. 2004. The Polysemy Networks of *over*. *SNU Working Papers in English Language and Linguistics* 3, Polysemy of English spatial terms have been studied related with image schema in cognitive semantics. Among English prepositions, *over* has been studied by Brugman (1988), Lakoff (1987) and Kretzer (1997). Tyler & Evans (2001) presented the criteria for distinguishing between distinct senses within a network and interpretations produced on-line. From their point of view, meanings that can be derived from another meaning by means of reconceptualization and pragmatic strengthening are not given a distinct sense node in the polysemy network. In addition, they proposed the criteria for determining the primary sense of the preposition. Tyler and Evans, however, arbitrarily applied what they termed as reconceptualization and pragmatic strengthening to the distinctive senses. This yields redundant senses and missing senses. The present study suggests more definite but simpler criteria for meaning distinction. The distinct senses result from where the relationship of the trajectory (TR) and land mark (LM) becomes different from the other scenes. The maximum application where we can not use reanalyzed conceptualization and pragmatic strengthening can add the missing senses and simplify the redundant meaning. With the suggested solution, we can get 7 distinct senses from *over* : a) protoscene ('above' but within a regional potential contact with the LM), b) ABC trajectory, c) examining, d) reflexive, e) covering, f) covering - multiplex, g) covering - multiplex and path. (Seoul National University)

KEYWORDS: image schema, trajectory, landmark, polysemy, pragmatic strengthening, reconceptualization

## 1. Introduction

Over the years, polysemy has been studied related with image schema in cognitive semantics. In this view, many distinct senses of a word constitute a semantic networks related with primary sense, or protoscene. Among the polysemous forms, *over* has been investigated since Brugman (1988) started to study on *over*. Brugman (1988) and Lakoff (1987) presented very fine-grained distinctive senses of *over*, but more recent works such as the study of Tyler & Evans (2001) have questioned whether such a fined-grained distinction is necessary or not.

Tyler & Evans mainly criticizes Lakoff (1987) and Kretzer (1997) in that they fail to distinguish between what is coded by a lexical expression and the information that must be derived from context, and knowledge of the world. Another criticism is that the primary sense presented in the previous studies was arbitrary. In this view, they presented the criteria for distinguishing between distinct senses within a network versus interpretations produced on-line, and the criteria for determining the primary sense of the preposition. Then, they show how to apply the criteria to *over*.

Tyler and Evans, however, applied what they term as reconceptualization and pragmatic strengthening to the distinctive senses arbitrarily. This yields redundant senses, and missing senses. The present paper investigates the problems of Tyler & Evans's study, and suggests the solution for the problems by presenting the more simplified polysemy networks of *over*.

## **2. Review (Tyler & Evans 2001)**

### **2.1 Previous Studies**

The full-specification approach (Lakoff 1987) characterizes the polysemy network of *over* as subsuming distinct but related topographical structures at a fine-grained level. According to this model, the differences in dimensionality of the LM (Land Mark) should be represented as distinct senses in the semantic network associated with *over*. His LM should be specified as [ $\pm$  vertical], [ $\pm$  extended], [ $\pm$  mid-point focus], and so forth. As a result, the distinct senses of *over* were at least 24.

On the other hand, Kretzer's approach (1997) was the partial-specification approach. There are 3 levels of schematization : the component level, the relational level, and the integrative level. The distinct senses result from the relational level. According to this model, image-schema transformations simply serve to widen the applicability of a particular sense. Kretzer's meaning distinction of *over* were 3. *Over 1* is static sense, *over 2* is dynamic sense, and *over 3* is occluding sense. He was able to constrain the number of senses, but the meaning of *over 1, 2, 3* were related arbitrarily. In addition, he understated the amount of polysemy. He also fails to make a distinction between the formal linguistic expression and the knowledge of the world. This is the same problem as Lakoff's study.

Moreover, the other main problem of both studies is that they lack the criteria for the primary sense of *over*. Both studies arbitrarily define the protoscene of *over* without any criterion.

## 2.2 Methodology

In order to solve the problems of the previous studies, Tyler & Evans presents a new methodology for determining senses. For a sense to be counted as distinct, first, it must involve a meaning that is not purely spatial in nature. In addition, it also has to involve a meaning in which the spatial configuration between the TR (trajectory) and the LM is changed to the other senses associated with a particular preposition. Second, there must be instances of the sense that are context-independent. In other words, the distinct sense could not be inferred from another sense and the context in which it occurs.

For determining the primary sense of a preposition, they present 4 criteria. (1) earliest attested meaning, (2) predominance in the semantic network, (3) relations to other prepositions, and (4) grammatical predictions (Langacker, 1987). According to the criteria, the protoscene (primary sense) of *over* is that TR is 'above' but it is different from *above* in that TR is within a region of potential contact with the LM. In addition, TR and LM are within each other's sphere of influence. According to the criteria, the protoscene of *over* is represented as in Figure 1.

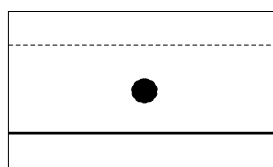


Figure 1. protoscene of *over*

## 2.3 Cognitive Principles

### 2.3.1 Perceptual analysis and reconceptualization

The integration of linguistic forms with other cognitive knowledge prompts the construction of a complex conceptualization. Distinct senses arise as a result of the reanalysis of a particular aspect of such a complex conceptualization. For example, static spatial scenes can be integrated

at the conceptual level to provide a dynamic sequence.

### **2.3.2 On-line meaning construction**

On-line meaning construction is applied to the protoscene to produce a contextualized interpretation of a preposition. In fact, the sentential interpretation is largely the result of various cognitive/inferential processes and access to the appropriate world knowledge. For instance, *over* in (1) does not prompt for a 'path,' that is, an 'above-across' sense.

(1) The cat jumped *over* the wall.

*Over* has the 'above' sense, but the 'above-across' interpretation of the sentence is possible because of what we know about cats (they cannot hover in the air), walls (vertical, impenetrable), the action of jumping of a cat, and force dynamics such as gravity. Therefore, the interpretation of the 'above-across' sense arises from the integration of linguistic prompts at the conceptual level.

### **2.3.3 Pragmatic strengthening**

Through the continued usage, inferences derived from experience can come to be conventionally associated with the lexical form identified with the implicature. New senses are derived from the conventionalization of implicatures through routinization and the stabilization of usage patterns. For example, *over* can be used to express the figure-ground relations between non-physical elements through pragmatic strengthening as in (2).

(2) A feeling of dread hung *over* the crowd.

The TR is not physically located higher than the LM, but *over* functions to note a sphere of influence between them. Pragmatic strengthening is one of the reasons why new senses associated with a particular preposition came to be derived.

## 2.4 Beyond the Protoscene

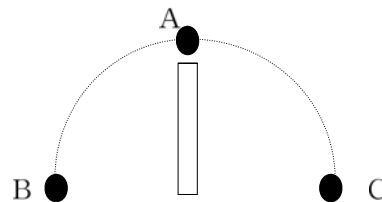
Tyler and Evans suggest 14 distinct senses of *over* according to the criteria they proposed. Here are semantic networks for *over* that Tyler and Evans suggested:

- 1) protoscene (Figure 1)

The picture is *over* the mantel.

- 2) the A-B-C trajectory cluster (Figure 2)

The cat jumped *over* the wall.



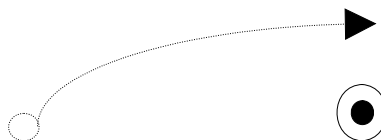
- 2A) on-the-other-side-of (Figure 3)

Arlington is *over* the Potomac River from Georgetown.

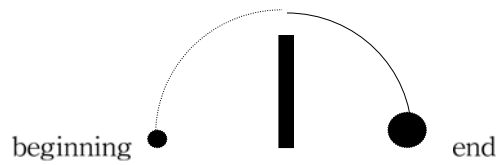


- 2B) above-and-beyond (excess 1) (Figure 4)

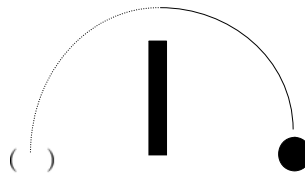
The arrow flew *over* the target and landed in the woods.  
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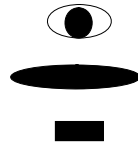
2C) completion (Figure 5)  
The cat's jump is *over*.



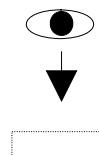
2D) transfer (Figure 6)  
Sally turned the key to the office *over* to the janitor.



3) covering (Figure 7)  
Frank quickly put the table cloth *over* the table.



4) examining (Figure 8)  
Mary looked *over* the manuscript quite carefully.



4A) focus-of-attention (Figure 9)

The little boy cried *over* his broken toy.

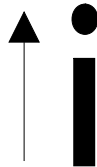


5) up cluster (Figure 10)



5A) more (Figure 11)

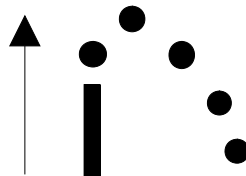
Jerome found *over* forty kinds of shells on the beach.



5A.1) over-and-above (excess 2) (Figure 12)

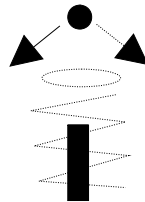
The heavy rain caused the river flow *over* its banks.

The child was *overtired* and thus had difficulty falling asleep.



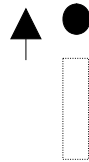
5B) control (Figure 13)

She has a strange power *over* me.



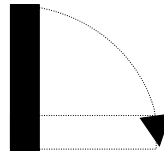
5C) preference (Figure 14)

I would prefer tea *over* coffee.



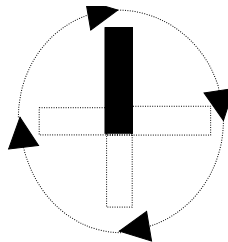
6) reflexive (Figure 15)

The fence fell *over*.



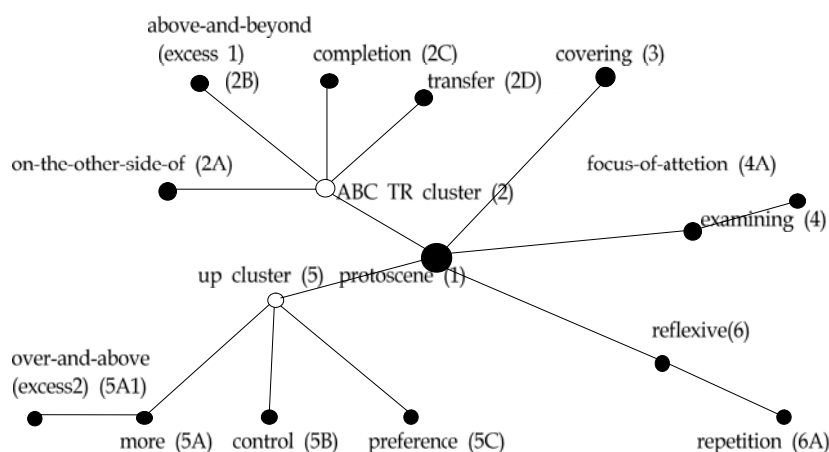
6A) repetition (Figure 16)

This keeps happening *over* and *over*.



Following Tyler & Evans's criteria, each meaning of *over* is linked with one another as a network as shown in figure 17.

Figure 17. Semantic network for *over*



### 3. Problems

Tyler & Evans tried to establish how to distinguish the linguistic prompts from context and world knowledge. They succeeded to present the criteria for distinct meanings and the primary sense. However, when we look at their distinction of meaning, we can find a few obscure senses, redundant senses, and missing senses compared with Lakoff's sense. They applied the reanalyzed conceptualization and pragmatic strengthening to meaning extension and inference, but this application is somewhat arbitrary. The range they influences on varies from the variant non-spatial meaning of a sense to a distinct new sense. Used to 'above-and-beyond' (excess 1) sense, pragmatic strengthening is applied to the extended sense as in (3).

(3) Your article is *over* the page limit.

Their explanation is that the limit (LM) is an intended target, but the article (TR) is beyond the LM. Such an association that seems

metaphorical is possible because of the reanalysis of going beyond the target. In this case, the excess meaning is still categorized as the above-and-beyond sense.

For another example, the vantage point is not higher than LM in (4), but the meaning of *over* is still subject to examining sense. This interpretation was possible because the pragmatic strengthening is applied to examining sense as in (4).

(4) The mechanic looked *over* the train's undercarriage.

On the other hand, when they introduce the control sense such as (5), they use conventional association (pragmatic strengthening) of control and vertical elevation. They refer to the experience of the victor in the combat from human history, and this sense occupies a distinct sense node in the network.

(5) Camilia has authority *over* purchasing.

The 'over-and-above' (excess 2) also holds a distinct meaning as in (6).

(6) The heavy rains caused the river to flow *over* its banks.

The origin for this sense is the reanalysis of scenes involving containment, thus the LMs are containers and the TRs are entities held by the containers. This process is similar to the process of the 'control' sense above. We associate the meaning of the TR and LM with our experience. It is related with pragmatic strengthening. The excess 2 sense describes the situation where the capacity of the container is exceeded by the TR.

As we have seen the examples above, the applied range of reanalyzed conceptualization and pragmatic strengthening is not consistent. In some situations, they are used to show the variant meaning of a sense, while in other situations, they are used to make a sense distinct.

This arbitrariness makes the distinction of some senses of Tyler & Evans's *over* obscure. The two excess senses are the examples. According to Tyler & Evans, the excess 1 sense is more closely tied to motion along a path and the interpretation of going beyond a designated point, while

the excess 2 sense is more closely related to exceeding the capacity of containers and exceeding what is normal (Tyler & Evans 2001: 757). However, it is hard to distinguish this difference when we examine some compound words. The meaning of *overfulfill* is 'to fulfill (a plan, quota, etc.) beyond expectation or before the appointed time'. In this case, *over* means that the person who fulfills the work goes beyond the intended quota, and at the same time, he/she exceeded what is normal. The sentence (3) is also obscure, because the page limit is normal, but the person exceeds it. Therefore (3) also can be interpreted as excess 2.

The 'more' sense is also hard to be distinguished. In (7), the forty kinds can be expected number to the speaker, or normal number. (7) could be either the 'excess 1' or '2'.

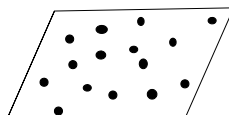
(7) Jerome found *over* forty kinds of shells on the beach.

These obscure distinction results from the obscure application of reanalysis and pragmatic strengthening. Since the meaning of 'excess' and 'more' is not spatial but abstract, we have to reanalyze the conceptualization of *over*, but the distinction becomes different by how to reanalyze, and how to infer the sense through the pragmatic strengthening.

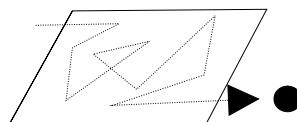
The distinction of the 'on-the-other-side-of' sense, the completion sense, and transfer sense is also difficult in that all are end-point focus (Lakoff 1987, Ekberg 2001). The overall image of the meanings looks similar though there are differences of the vantage point, the process, and the change in location. Moreover, the examining sense and the focus-of-attention sense are similar in that the vantage point is higher than LM and the attention of the TR directs towards the LM.

Some senses are missing compared with Lakoff's (1987). They are, what Lakoff termed schema 3.MX (multiplex) (8) and schema 3.MX.P (multiplex. path) (9).

(8) The guards were posted all *over* the hill. (Figure 18)



(9) I walked all *over* the hill. (Figure 19)



These are related with the 'covering' sense, but they are different from Tyler and Evans's covering schema in that the TR of schema 3.MX is multiplex, while the TR of schema 3.MX.P is the points representing that the multiplex entities are joined to form a path. It is impossible, according to the criteria of Tyler & Evans, to derive the 'multiplex' sense from the Tyler & Evans's covering sense, and the contexts in (8) and (9) do not give any clue to the covering sense. Each of the two meanings should have given a distinct sense node.

In conclusion, Tyler & Evans fail to give a clear distinction of the polysemy of *over*. Since they used the concept of reconceptualization and pragmatic strengthening arbitrarily, the distinction became obscure, and this yields a few redundant and missing senses. This problem can be solved when the application of reconceptualization and pragmatic strengthening are consistent.

#### 4. Solution

In order to make the distinction of polysemy of *over* clear, the solution that I propose is that the senses that reanalysis or pragmatic strengthening is possibly applied to should be bound in the same sense node. When the relation of LM and TR becomes different (in number of TR, the vantage point, etc.), a distinct sense is generated. This difference can be represented in the schematic figure. The second criterion of Tyler & Evans for determining the distinct sense is that there must be instances of the sense that are context-independent. According to my solution, the context-independence means where the application of reconceptualization and pragmatic strengthening is no more possible.

Holding Tyler & Evans's protoscene of *over* and the first criterion of determining distinctive sense, and extending the meaning of context-independent, I can add the missing senses and simplify the redundant senses. The following sections are the distinct sense nodes

that are proposed in the present study.

#### 4.1 Protoscene

The 'control' sense and the 'preference' sense are included in the protoscene. As for the 'control' sense, the TR is reanalyzed as a controller, and the LM is reanalyzed as a controllee. The TR is higher than the LM, and this meaning is strengthened by pragmatics. This process is also applied to the preference sense.

#### 4.2 The ABC trajectory as a node in the network

Tyler & Evans do not give a sense node to the ABC trajectory, but it is a cluster that has 4 sense nodes. The schematic figure of this meaning is intuitively quite different from that of the protoscene. According to Tyler & Evans, *over* does not have a sense node for 'above and across' sense because this sense is derivable from the protoscene that has only the sense of 'higher than LM, and the TR and the LM are influential' through our world knowledge as stated in section 2.3.2. However, *over* is different from other prepositions when we put them in place of *over* of (10), such as in (11) and (12).

(10) The cat jumped *over* the wall.

(11) The cat jumped *onto* the wall.

(12) The cat jumped *on* the wall.

Both (11) and (12) have the sense of 'higher than LM,' but the sense of 'across' results from *over* only. The sentence "The cat jumped *across* the wall" does not entail the meaning of 'higher than.' Therefore, I propose the ABC trajectory should be the distinctive sense node in the network.

Now, the 'above-and-beyond' sense is conflated to the ABC trajectory sense. Though the TR goes beyond the LM, the TR will arrive at the end-point sometime. The figure of this sense has omitted the end-point. As in (10), TR actually undergoes the path schema.

The transfer sense also can be reanalyzed as the ABC trajectory sense. The change of the location of TR means that it actually underwent the path schema.

The reconceptualization of the ABC trajectory yields an imaginary path and end-point focus. The 'on-the-other-side-of' sense describes an end-point focus as a result of mental scanning of path (Dewell 1994, Ekberg 2001).

When the end point of a path is applied to the domain of time, the 'completion' sense also subjected to the ABC trajectory sense by the pragmatic sense.

The two 'excess' senses and 'more' sense can all belong to the ABC trajectory sense. Lakoff related the excess sense with the ABC trajectory sense. The TR (work, situation, capacity, etc.) gets closer to the LM (intended goal, containment, limit, due, etc.), arrives at the expected point, and finally exceeds the LM. This sense is strengthened by the conventional usage.

Therefore, previous different seven meanings are combined in the new sense, or the ABC trajectory sense, and the maximum application of reanalyzed conceptualization and pragmatic strengthening make the conflation possible.

### **4.3 Covering**

Following Tyler & Evans, the relation of the TR and the LM of the covering sense is different from the protoscene in that its vantage point is higher than the TR. Lakoff presented other meanings of covering, that is the schema 3.MX and the schema 3.MX.P. Since the relationships of the TR and the LM in these senses are different from Tyler & Evans's sense (there are many TRs in the schema 3.MX, and the TR is smaller than the LM in the schema 3.MX.P), they occupy the distinct sense node in the network.

### **4.4 Examining**

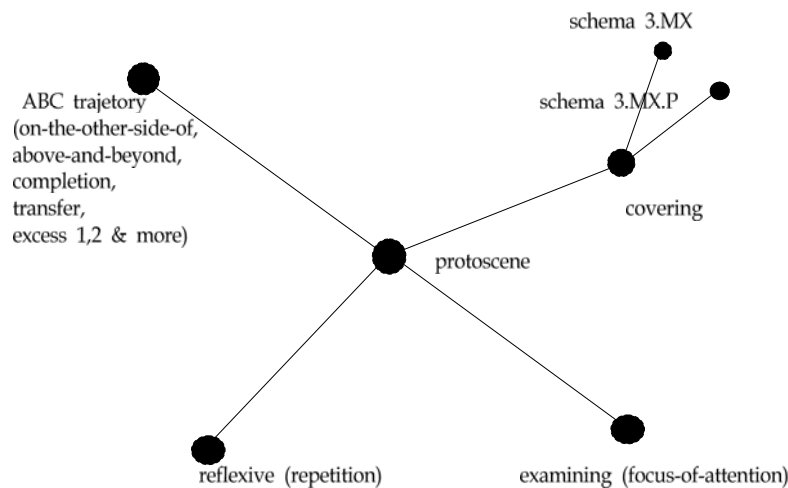
The 'examining' sense is different from other senses in that the vantage point is higher than the LM, and the TR is usually identified with the vantage point. The 'focus-of-attention' sense is included in this sense when the LM is reanalyzed as a focus of attention.

### **4.5 Reflexive**

Following Lakoff and Tyler & Evans, this sense is distinctive in that the same entity can be both the TR and the LM. The reflexive sense can reanalyzed as the repetition sense in that the TR passes through 360 degrees returning to its original starting point.

Figure 20 shows the revised semantic network for *over*. Some senses that reanalysis or pragmatic strengthening can be applied to are bound in a sense, while the relation of LM and TR is different, a distinct node is projected. These criteria results in five main senses : protoscene, ABC trajectory, covering, examining and reflexive. Only the 'covering' sense has subnodes for multiplex and multiplex-path.

Figure 20. Revised semantic network for *over*



## 5. Conclusion

Suggesting a new model for the polysemy network of *over*, Tyler & Evans proposed the criteria for determining distinctive senses and primary sense. However, they still could not apply the concept of reanalyzed conceptualization and pragmatic strengthening to their analysis. This obscure application resulted in the missing senses and redundant senses of *over*. The maximum application where we can not use reanalyzed conceptualization and pragmatic strengthening can add the missing

senses and simplify the redundant meaning. The distinct senses result from where the relationship of the TR and LM becomes different from the other scenes. With the suggested solution, we can get 7 distinct senses from *over*. Though the application to other preposition is necessary, I believe that this solution, along with Tyler & Evans (2001)'s criteria, will represent the polysemy networks of *over* better than the previous model.

Though the present study was aimed at focusing on *over* only, further application to other spatial terms such as *on*, *above*, *beyond*, and *up* will be possible with the approaches presented in this paper. Further researches remain to be done in the future. With further study, we can grab the general conceptualization of spatial polysemous terms in English.

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