Abstract

The goal of this thesis is to construct prototype schemata and top schemata for spatial semantic content of English prepositions ABOVE, ON and OVER respectively, and to answer the question how these prepositions interact in the semantic field defined by the up axis.

For this purpose, Langacker's schematic network model is adopted. The model consists of three node types and two types of relations. A schema has prototype effects on its extended instances, and this prototype schema and its extension specialize the dominating schema. Three node types are of any degree of complexity, and side-step the long existing controversy of whether category representations take the form of schema, prototype or actual example. Specialization of schemata by hierarchical prototypes and instances overcomes the over-abstractness of schematic representations. In the network model, horizontal growth by extension from prototype schemata is inherently associated with its vertical growth of extractions of schemata. This seems more natural to accommodate lexical changes brought about by acquisition and grammaticalization. It should be pointed out that the schema of cognitive salience is at the basic level of a prepositional category.

Construction of schemata for ABOVE and ON begins with a search for prototypical senses through Experiment 1 which takes the method of sentence generation task. Responded uses of each preposition are classified into a number of senses according to their semantic similarities. Frequency of classified senses is counted by percentage and the sense of the greatest frequency is considered to be the prototype. Other senses are compared with this prototype to find their similarities for building a dominating schema or schemata. The schema and schemata arrived at can be elaborated into rich images in contexts through valence relations. ABOVE and ON are studied in this way, while the search for the prototype of OVER is mainly based on Lakoff's study.

The analysis shows that each of the three prepositions has its own schematic network. The top schema for ABOVE is that TR is higher than LM along the up axis with no contact between the entities. Since the up axis is not necessarily vertical, prototypical schema for ABOVE is that TR is vertically higher than LM without contact. As for ON, the highest schema is that LM supports TR. "Support" is a naive concept. By supporting, weight of an object presses or pulls upon another, the supporting object

then resists the push or pull. The prototypical schema for ON is the sense that TR is contiguous with LM and supported by it. OVER is semantically more complex than ABOVE and ON. Its top schema is that TR is higher than LM along the up axis. It has three sub-schemata: motion sense, stative sense and covering sense. Motion sense is the prototypical schema, in which TR traces a path vertically higher than LM. Stative sense is that TR is vertically higher than LM without contact. Covering sense means that TR covers LM. The covering sense exists both in motion uses and stative uses.

The contrastive study of the three prepositions gives us a deeper insight into their meanings. Comparisons are carried out from three angles: prototypes, stative senses and meaning ranges. As for prototypes, ON takes "contact" as a prerequisite; ABOVE necessitates "non-contact" between TR and LM; though OVER contains non-contact in its schema, this can be altered by context. The second angel of comparison is concerned with the stative or dynamic nature of the prepositions. ABOVE and ON are primarily stative in nature, while OVER covers a wider semantic area than stative relations. Therefore, the three are more comparable in stative senses. With regard to vertical distance between TR and LM, these prepositions can be ordered as ON < OVER < ABOVE from approximation to a long distance. With regard to horizontal distance, horizontal projections of TR and LM related by ON or OVER generally coincide; for ABOVE, they might diverge but not to the extent that horizontal distance becomes cognitively significant. The comparison of meaning ranges of the prepositions is done by means of minimal pairs. The results show that OVER and ABOVE are semantically closer to each other than each of them to ON.

Analytical results show that distinctions between ABOVE, ON and OVER are clear regarding prototypes, but their meanings are fuzzy at boundaries, sometimes even overlapping because one can be substituted by another in some contexts. Therefore, the space higher than a landmark seems to be divided into several subparts in the conceptual system, and each subpart corresponds to a certain sense of a certain preposition. It is at least the case with English speakers. To locate an entity in the higher position, one can adjust a scene that he has never experienced to fit into his conceptual system and find appropriate words to match it. Abstractness of concepts, fuzzy boundaries between concepts and language devices of modification operate together to explain lexical economy reflected by closeness of English spatial prepositions.

Keywords: Above, On, Over, Space, Prototype, Schema

摘　要

本文试图从认知语言学角度构建英语介词 ABOVE，ON 和 OVER 在空间语义域内的原型图式和最高图式，并比较分析它们在"上"这一语义场内的相互关系。

研究主要采用了 Langacker 的图式网状模式，该模式由图式、原型和例示三种节点和拓展、细化两类关系构成。图式相对于同级例示而言具有原型效应，而低层原型及其拓展例示则是高层图式的细化。因而，心理表征在 Langacker 模式中分别表现为图式、原型和例示，三者抽象程度各异，认知心理学关于表征形式的争论不再存在。原型和例示通过细化关系在图式上增添信息，克服了纯图式表征过于抽象的弱点。图式的抽象和例示的拓展赋予模式以动态性质，能更自然的描述词义的增长、消亡和语言习得及语法化过程。须强调的是，语言使用者不一定意识到每个图式的存在，只有处于基础水平的图式才具有显性特征。

原型是构建图式的基础。ABOVE 与 ON 的原型意思是通过第一个实验来确认的，试验采用了限时造句的的方式。所得到的介词用法根据其相似性被归为若干种意思，每种意思在该实验中的出现次数经过累计后，频率最高的意思就是原型。其他意思与该原型进行比较，其共同之处构成最高图式。OVER 没有被列入实验，其意思类型和原型的分析主要基于 Lakoff 的个案研究。

分析表明 ABOVE，ON 和 OVER 具有各自特定的图式结构。ABOVE 的最高图式：以上轴为参照，动体高于陆体且不相接触。其原型图式：动体垂直高于陆体且不相接触。ON 的最高图式：陆体支撑动体。其原型图式：陆体与动体相连接并支撑动体。OVER 在语义上较为复杂。其最高图式为：动体垂直高于陆体。这一图式涵盖三个子图式，即动态义、静态义和覆盖义。动态义是指动体运动的路径高于陆体，静态义指动体的静态位置高于陆体且不相接触，覆盖义则意味着动体覆盖陆体，OVER 的动态用法和静态用法都可以体现覆盖义。三个子图式中，动态义具有原型效应。

纵向剖析了单个介词的语义后，本文从原型义、静态义和意义范围三个角度对 ABOVE、ON 和 OVER 进行了横向比较。就原型义而言，ON 以动体和陆体相接触为必要条件，ABOVE 则要求二者间没有接触；虽然在 OVER 的动态图式中动体与陆体不接触，这一特征却可以受语境影响而改变。其二，三个介词在静态义上具有最大的可比性。以动体与陆体间的垂直距离为维度，三者由近及远可排序为

ON<OVER<ABOVE; 以水平距离为维度, ON 或 OVER 连接的动体、陆体的水平投影相重合, ABOVE 则允许二者在水平轴上有一定的偏差。其三, 意义范围的比较采用了最小差异对的方法, 比较分析表明 OVER 和 ABOVE 在语义上较 ON 更为接近。

分析结果表明, ABOVE、ON 和 OVER 在原型义上有着明显的区别, 而彼此间的概念边界却很模糊, 因为某些语境中的词项互换不会导致语义的明显变化。因此, 在英语本族语者的概念系统中, 高于物体的空间似乎被划分为若干个子区域, 每一区域与特定介词的特定意思相对应。当某一物体处于相对较高的位置时, 为了表述其空间方位, 我们常常无意识地对场景进行加工使之符合已有的概念系统, 从而提取出相对应的词项。概念的抽象性、边界模糊性以及语言的修饰功能使得我们可以用有限的空间介词来描述无尽的空间方位关系。

关键词: ABOVE、ON、OVER、空间、原型、图式

Tables & Figures

Chapter One Introduction

The study of prepositions has a long history in linguistics. Guided by different philosophies of language, every linguistic school arrives at its own research conclusions. Traditional Grammar (张道真, 1981: 314-363; 章振邦, 1981: 504-536) takes a descriptive method and emphasizes the function of expressing a relation as the critical property of an English preposition; restrictions are imposed on the governed category, which is required to be a noun phrase or an element that equals a noun; another restriction is that a bare preposition cannot be a sentence component by itself. A view in many ways opposed to the one held by Traditional Grammar is proposed within the framework of Structuralism (Harris, 1951; Quirk, 1968). Basically, three properties are identified as typical of prepositions. First, they are function or structure words; the claim is meant to express that they function as a structural signal at the beginning of a prepositional phrase indicating the construction type they introduce. Second, they have little lexical meaning. Third, they are limited in number and hardly change through time. A new aspect of prepositions is focused on in the framework of Case Grammar. According to Fillmore (1968, 1969), the main function of prepositions is to express case relations which are specified by the case frame of a verb. In the unmarked case, a given preposition expresses a given relation, such as *by* to express the Agent, *with* the Instrument, or *to* the Dative, etc.

All these linguistic schools have carried out their studies to cover a series of properties of prepositions like closeness, category selection, case-marking function, etc. The main disagreement among them seems to be views on the semantic content of prepositions. Structuralism claims that prepositions are meaningless. This property does not hold good for spatial prepositions and temporal prepositions. This is evident if one preposition is substituted for another it will inevitably cause a severe change in meaning. For example,

(1) The book is	on	the table.
	under	
	inside	
	near	
(2) He came	on	June 1.
	before	
	after	

Therefore, there seems to be a distinction between lexical prepositions and function prepositions.

As to Case Grammar, the case-marking characterization is problematic when a preposition obviously expresses a different relation than the one predicted by the case frame of a verb.

(3) The village is over the hill.

In (3) the verb *be* assigns the relation Location to its complement whereas *over* indicates the relation Path. In the framework of Case Grammar, this conflict remains unexplained. It is resolved if one assumes that prepositions do not express relations assigned by verbs but rather assign relations themselves to their own complements. This property means that prepositions are more autonomous than case affixes (Rauh, 1991). Thus, there need to be a distinction between prepositions which share properties of case affixes and those that do not. Prepositions as case markers legitimate only those cases where, for example, a verb, adjective, or noun requires a certain preposition to mark the following object. However, this is not what Fillmore assents to.

Therefore, views that "prepositions are meaningless function words" and that "prepositions are like case affixes" do not refer to the complete set but only to subsets. The linguistic schools over-generalize the grammatical properties of a subset of prepositions to be that of the whole set and neglect an important part of prepositions, that is lexical prepositions. Lexical prepositions have context-independent properties represented in the mental lexicon as their lexical meaning. Look at the following sentences containing *on.*

(4) He wanted the books on the table. (Location)

(5) He stayed on the hill for an hour. (Location)

(6) Her eyes are blue as the sea on a cloudless day. (Temporal relations)

(7) He read the book on my suggestions. (Causal relations)

(8) He likes to talk on the telephone. (Relations of manner)

The preposition has such a wide range of semantic diversity that it is a shared view that prepositions are highly polysemous.

Traditional Grammar defines prepositional meanings as relational in nature. This view is the most comprehensive one compared to other views. Traditional Grammar books treat prepositions as polysemous usually in two ways. Some studies (张道真, 1981: 314-363) just describe and discuss different uses of a preposition in speech

without trying to gather them under one underlying meaning; their main accomplishment is to interpret the uses of a given preposition according to the meaning of the nominal phrases that the preposition is combined with, but their semantic description is neither exhaustive nor really systematic. Other studies (章振邦, 1981: 504-536) classify the prepositional uses into sections with subheadings of time, location, methods, causal relations, etc, which indicate the context where we use a given preposition. The grammarians tend to enumerate prepositional uses without synthesizing these uses into a unified whole. So, the descriptions cannot be said to contain a well structured and comprehensive definition or analysis of the way a given preposition behaves grammatically and semantically.

Because of all these limitations with the above-mentioned linguistic schools, the present study aims to explain the polysemous nature of English spatial prepositions *above*, *on* and *over* in the field of Cognitive Linguistics. CL takes experientialism as its philosophic foundations and attributes the complicated meaning system of human language to the close relationships between human experience and conceptual system (Lakoff, 1987; Langacker, 1987; Dirven & Verspoor, 1998), and thus offers a completely different way to prepositional semantics.

The thesis consists of four chapters. Chapter One is a general review of the previous studies on prepositions. Chapter Two introduces the framework of the present study, including basic concepts like up axis, prepositions as relational category, image schema, and most importantly, Langacker's schematic network model which is of great importance to semantic research. Methods to be exploited are also introduced. Chapter Three makes use of these theories and methods to analyze *above*, *on*, and *over* in the spatial domain. It consists of two sections. Section one is devoted to searching for prototypes and constructing schemata for the three prepositions respectively. The second section presents a contrastive study of the prepositions from three angles, i.e. prototypes, stative senses and meaning ranges, which reflect the analytical results in the previous section. Chapter Four draws a conclusion of this study.

Chapter Two Framework of the Present Study

2.1 Basis Concepts

2.1.1 Up Axis

English spatial prepositions are used to define locative information about a trajector with reference to the location of a landmark. Viewing, either in actual fact or through an act of imagination , allows human beings to specify a frame of reference, a matter in our naive physics of similarity to coordinate axes (Levinson, 1996). The frame of reference consists of three axes with origin at the reference object: the up/down vertical, the left/right horizontal and the front/back horizontal. These orientations arise from our basic experience of body standing upright on horizontal ground with eyes looking straight ahead (Herskovits, 1986: 157).

Since the present study is about *above*, *on* and *over* which are all inherently related to the vertical up axis, they are considered to form a semantic field defined by this axis. So, to say a few words about it before further discussion is necessary. We grasp the structure of verticality repeatedly in thousands of perceptions and activities we experience every day, such as perceiving a tree, our felt sense of body standing upright, the activity of climbing stairs, forming a mental image of a flagpole, measuring our heights, and experiencing the level of water rising in a basin (Johnson,1987: Preface). We form a VERTICALITY schema as the abstract structure of these verticality experience, images, and perceptions. This vertical axis has an up-down direction. The up axis enjoys privileged status for the ubiquitous gravitational function. Owing to our ability to mentally rotate an image schema, which in turn seems to emerge from our kinetic experience (Lakoff, 1987: 445-446; Johnson, 1987: 25), a vertical up axis can be transformed into a horizontal one or one with upside down.

2.1.2 Prepositions as Relational Category

Prepositions are grammatical tools that belong to the class of linguistic categories for expressing relations. They carry relational content as opposed to material content of lexical items such as nouns which indicate material entities. Relations expressed by prepositions are primarily relations in space since we perceive entities in the world

around us in terms of their spatial configurations and locations. A form of spatial structure is often lent to nonspatial domains through metaphorical extensions (Lakoff & Johnson 1980: 14-21). Yet, prepositions are not the only grammatical category that expresses relations in space. Svorou (1993: 31-60) lists *adpositions, affixes, case inflections and spatial adverb forms* as the grammatical forms that convey relations in space and these *spatial grams* are grammatical forms that interact with the rest of language in such a way as to structure and organize it. In fact, relational grammatical forms in general and prepositions in particular serve to relate non-relational categories, such as nouns, into meaningful phrases and sentences.

As to relations, especially spatial relations between entities, a distinction of stative and dynamic (王逢鑫, 1996) has long been made in semantics. Stative relations stand for those that are stable, repeated, habitual and lacking in changes. Dynamic usually means acts and action, and dynamic relations always contain an element of change. Similar to this pair, the distinction of *summary scanning* and *sequential scanning* (Langacker, 1987: 248-249) is proposed in cognitive linguistics. These are contrasting modes of cognitive processing that serve to structure a complex scene. Summary scanning is basically additive, and the processing of conceptual component proceeds roughly in parallel. All facets of a complex scene contribute something to a single configuration where they are conceived as coexistent and simultaneously available. In the sentence *The book is on the table*, the spatial relation expressed by the preposition "on" is constructed as a gestalt whole, i.e. all elements of the image of this relation are perceived together. Sequential scanning, on the other hand, involves successive transformations of one configuration into another. The component states are processed in series rather than in parallel. Langacker(1987: 248) uses an analogy to bring out the difference between the two scanning modes: sequential scanning is like viewing a motion picture sequence while summary scanning a static photograph.

In my opinion, the distinction of summary and sequential scannings is the cognitive aspect of that of stative and dynamic relations. A stative relation is constructed through summary scanning, while a dynamic one through sequential scanning. Since the terms of stative and dynamic are more literal in meaning and easier to be associated with body experience, I will use them in this study. But the terms are different from those in traditional sense by an added cognitive element denoted by summary and sequential scannings.

It merits our attention that some English prepositions are mainly stative, some are primarily dynamic, and others are legitimate for both. How about ABOVE, ON and OVER? This will be further analyzed in Chapter Three.

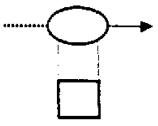
2.1.3 Image Schema

An image schema is a recurrent, dynamic pattern of our perceptual interactions and motor programs that gives coherence and structure to our experience (Johnson,1987:18-40). It exists at a level of generality and abstraction that allows it to serve repeatedly as identifying an indefinitely large number of experiences, perceptions and image formations.

Some cognitive linguists (Johnson, 1987; Lakoff, 1987) maintain that an image schema is nonpropositional. "Proposition" in standard senses is usually taken to be whatever expressed by a sentence which makes a statement (Mattews, 2000). A proposition, in which the structure of the representing world only has an extrinsic effect by virtue of exactitude of the description of the represented world, can capture some of the important structural features of an image schema, but they are unable to capture its analog nature and the crucial role it plays in cognitive operations. Take the concept of *physical force* (Johnson, 1987: 4-17) as an example. Of course, we explicate in propositional terms a concept of "physical force", but its meaning - the meaning it identifies - goes deeper than our conceptual and propositional understanding. Its meaning depends on publicly shared meaning structures that emerge from our bodily experience of force. We have bodies that acted upon by various forces like gravity, light, heat, wind, bodily processes, and the obtrusion of other physical objects. We, too, can be sources of force on our bodies and on other objects. We develop patterns for interacting forcefully with our environment. Sometimes we are frustrated, defeated, and impotent in our forceful actions. At other times we are powerful and successful. Slowly we expand the meaning of "force". The repeatable patterns in our physical experience give rise to the concept of FORCE. Therefore, image schemata are propositional only in this sense that a proposition exists as a continuous, analog pattern of experience, with sufficient internal structure to permit inferences (Johnson, 1987:3-4).

Sometimes, a category is represented graphically with diagrams in two- or three-dimensional space. This is an analog representation, whose structure is partly imposed by the inherent constrains of the representing world and partly by the represented world. Lakoff (1987: 416-461) studies "over" in this way, but his drawings are still described in

a propositional manner by complementing features V (vertical), X(extended), P(path), etc. As a matter of fact, his drawing for Schema 1 can be represented by the following propositions to the same effect :



a is higher than b

a is mobile

its trajectory spreads from one side of b to the other

Figure 1: Lakoff's Schema 1 (1987: 419) (Vandeloice, 1990:421)

Therefore, either propositional or graphic view of schemata leaves something to be desired and each has advantages over the other. I have some doubt that either linguistic or cognitive studies have advanced to the point where the issue can be addressed in truly substantive terms. So long as there is no substantial biological evidence, the two kinds of representations are merely hypotheses, no more than linguists' or psychologists' representations of what mental representations are like. Therefore, both are possible. I will employ both types of representation in the present study as Langacker (1991: 73-90) do "of".

2.2 Langacker's Network Model

A number of earlier studies on prepositions (Vandoloise, 1986; Herskovits, 1986; Lakoff, 1987: 416-461) have been done with prototypes models. The model was pioneered by Eleanor Rosch (1973, 1975, 1978). In this model, a category is defined with reference to a prototype, i.e. a schematized representation of typical instances. Entities that conform to this prototype are accepted unproblematically as "central" members of the class. Nonconforming members may nevertheless be assimilated to the category as "peripheral" members provided that they are judged as being similar to the prototype in certain respects. Therefore, class membership is a matter of degree, reflecting the distance of a member from the prototype. Based on this model, the earlier prepositional analyses form a tendency to try to find out the basic prototypical use of a given preposition that can govern all its instantiations in discourse.

Rosch made a series of experiments in 1970's to determine to what extent prototypes were part of the mental representation of categories. The methodology of these experiments was essentially 'priming'. Subjects were to decide whether or not physically identical objects (chair, chair), or semantically similar objects (chair, table) belonged to a same supercategory (furniture). For half the subjects tested, the noun

naming the supercategory was said two seconds before a decision was to be made. The hypothesis was as follows: if the information given by the noun resembled a list of criteria, the irruption of the noun should have the same effect on all of the members of the category; if, on the contrary, the information resembled a prototype or the internal structure of the category, identity decisions should be facilitated for more representative members over non-representative members. The interpretation of such experiments is nevertheless very difficult and numerous tests practised by Rosch, for example on colors, have even more diversified results and complicate the analysis. Faced with these problems, Rosch (1978: 38) writes: *The fact that prototypicality is reliably rated and is correlated with category structure does not have clear implications ... for a theory of cognitive representation f categories.* And a little further down, she (1978: 40) concludes: *Prototypes do not constitute a theory of representation of categories until it is made concrete by inclusion in some specific theory of representation.*

Langacker is one of the main advocates (Johnson, 1987; Dirven & Radden, 1996) of the image schema approach. He adopted the idea that in order to approach prepositions we should focus on the definition of the schema for a preposition which consists in describing, in an abstract and general manner, the mental picture we create when frequently using a particular preposition and then link this mental picture to the various usage by means of elaboration.

2.2.1 Working Mechanism

Langacker's model (1987: 369-386) represents a synthesis of prototype theory and categorization based on schemata. Categorization by prototypes and categorization by schemata are taken to be inherently related and describable as aspects of a unified phenomenon.

This model contains three node types, i.e. schema, prototype and example, and two types of categorization relationship, i.e. specification and extension. In Langacker's view, categorization resides in a comparing event of the form (S>T)=V; it is achieved when a conceptualizer succeeds in observing within the target (T) a configuration that satisfies some or all of the specifications of the standard (S). V- the magnitude of discrepancy between the standard and target - is required to fall below a certain threshold of tolerance. When all the specifications of S are satisfied by T, so that V equals 0, S is referred to as a schema, and the categorizing relationship S→T is one of elaboration or specialization; there is full compatibility between S and T, even though

the latter is specified in finer details. When there is some inconsistency between S and T, so that V has a nonzero value, S can be referred to as a prototype; the categorizing relationship S→T then involves extension rather than simple elaboration, as some of the specifications of S must be modified or suspended if this configuration is to be observed in T.

Therefore, if a concept X accords fully with the specifications of a prototype PT, it is recognized as a prototypical instance of the category. There being no conflict in specifications, PT is judged schematic for X in the categorizing relationship: PT→X. Suppose, on the other hand, that X is inconsistent with certain specifications of PT. Concept X can nevertheless be assimilated to the category provided that the conceptualizer observes a measure of similarity between PT and X and is willing, for purposes at hand, to overlook their discrepancies. This perception of similarity is pivotal to the categorization and consequently leads to a dominating schema. Categorization by extension from a prototype therefore has the form depicted as Fig.2.a. Since X stands for extended example, PT for prototype, and SCH for schema, we are able to get Fig.2.b.

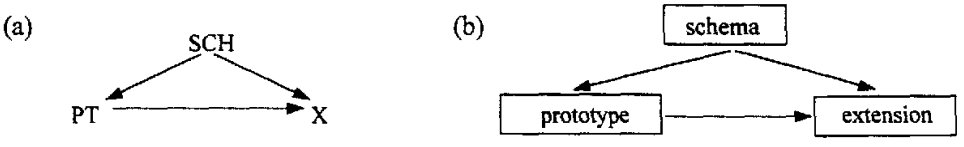


Figure 2. Node types in Langacker's networks

2.2.2 Review

There are three ways in which Langacker's model pays off. Firstly, though the model belongs to the schematic approach, it exploits the notion of prototype to a considerable extent instead of simple rejection. The psychological reality of the prototype structure of categories has been proved by a number of empirical studies, such as Labove's experiment of naming line drawings of household receptacles (Labove, 1973), Rosch's experiments by asking subjects to judge the extent to which examplars belong to a category and also her experiments by techniques of priming and elicitation (Rosch, 1973, 1975). Their studies indicate that degree of category membership can be readily elicited from speakers of a language and characterizes many different kinds of categories. Therefore, for any theories concerned with categorization to deny prototype effects is impossible. In langacker's model, the term prototype is not referring to particular entities, but understood as schematic. There are good reasons for doing so.

Even on the prototype-as-exemplar view, one still needs to posit an abstract concept of a prototype, in order for a speaker to be able to identify the prototype on different occasions. Furthermore, this concept may well be unspecified with respect to certain attributes of category members. It is conceivable that the prototype of CAT will be unspecified for sex; yet each exemplar of the category is necessarily either male or female. To this extent, the internal representation of the prototype is in any case abstract. The equation of the prototype with a specific exemplar would also preclude the possibility that the members of a category might themselves be categories. Individual robins are members of BIRD, but also BIRD has as one of its members the category ROBIN (Taylor, 1989: 59-80). A further difficulty arises with more abstract categories. If prototypes are exemplars, where would we expect to find the prototypes of COWARDICE and TALLNESS? Events can be described as prototypical instances of COWARDICE, objects exhibit a prototypical TALNESS. One could not, on the other hand, say that an event is the prototype of COWARDICE, nor could one pick out an object as the prototype of TALLNESS. Therefore, prototype is better understood as schematic.

The second advantage is that three node types of the model are of any degree of internal complexity and admits multiple bases for categorization, and thus side-step the controversy pre-occupying cognitive psychologists of whether category representations take the form of prototype, schema, or actual example. A schema which can be elaborated into more specific prototypes and examples is also considered a prototype to its sister extension nodes, because it is able to be acquired earlier, withdrawn more quickly and used at a higher frequency. So, distinctions between prototype and schema are blurred out in the networks, neither schematicity nor prototypicality is absolute. A local schema and a local prototype can be identified for every instances of extension; a prototype is the full elaboration of the dominating schema, and simultaneously a local schema for its immediately dominated prototype and extensions. This systematic structure of nodes and relations enables the networks to overcome an objection often raised to schematic representations. The objection is that a schema is vague and lacks specifications to provide an adequate basis for predicting the range of exponents of a sign (Taylor, 1990: 525). In schematic networks, a schema exists in the context of system, prototypes and extensions are full specifications of the dominating schemata and supplement all the detailed information. Thus, the above criticism is no longer

valid.

A third justification of Langacker's model is that it is a stereoscopic structure combining both horizontal networks and vertical networks. Extension from a prototype coexists with elaboration of a schema. If we think of extension as a "horizontal" relationship, and schematicity as a "vertical" one, we can say that the "outward" growth of a lexical network by extension from prototypes is inherently associated with its growth by extraction of schemata. Hierarchical networks seem to allow more naturally for dynamic network growth and decay and appear better able to accommodate lexical changes brought about by acquisition and grammaticalization (Rice, 1991: 142). Developmental evidence suggests that linguistic signs may be initially associated with specific representations. Abstract schemata may take the place of concrete examples, and more abstract schemata supplant the relatively concrete schemata. Take Langacker's example of children's acquisition of TREE (Langacker, 1987: 381-386). A child extracts the concept TREE' as "a tall plant growing on the earth with trunks, branches, leaves and barks" from exposure to typical instances in his life, such as oaks, maples, birch, camphor tree, etc. Then seeing a pine, he may abstract away differences between leaves and needles, and form a new schema TREE" at a higher level with the original concept of TREE' as a prototype and "pine" as its extension. Outward growth and vertical growth tend to co-occur as interrelated facets of the same expansive mechanism, one cannot exist without the other. This process goes on and on till the child grasps the complex category TREE with the same proficiency as an adult.

An objection occasionally raised to schematic representations, including Langacker model, is that in many instances speakers are not conscious of any schema underlying manifestations of a sign (Taylor, 1990:527). This problem can be solved by Rosch's notion of "basic-level category". Rosch and her associates extended the study of basic-level effects from cognitive anthropology to the experimental paradigm of cognitive psychology. They found that psychologically the most basic level was in the middle of the taxonomic hierarchies, and that human knowledge is primarily organized at this level (Rosch, 1976). Though Rosch mainly applied this notion to explaining categories that have physical quality like furniture, fruits, utensils, etc, it is also applicable for prepositional semantics. Prepositional categories, like noun categories, have hierarchical structure too. For a preposition, at the lowest level stand its instantiations in discourse, the middle level or levels are its senses and the top level is the abstract meaning

underlining all the lower levels. Since basic-level effects are an attribute of human cognition for taxonomic hierarchies, it is naturally true for prepositional semantics. I suggest that the schema which is cognitively real and salient is at the basic level of a prepositional category, i.e. sense level. On the other hand, it is not claimed in this study that the schematic notion always attracts conceptualizers' attention as an object of explicit awareness. Nor is it claimed that elaboration by prototypes and extensions necessarily entail unit status or cognitive salience for the schema.

2.3 Methods

2.3.1 Steps to Search for Prototypes and Build Schemata

One of the goals of this study is to search for prototypes and construct top schema for each of the three prepositions in the spatial domain. For this purpose, Langacker's model is adopted. I will approach the goal by the following steps.

Firstly, for ABOVE and ON, an experiment will be designed to find prototypes of their semantic potentials and also to get a corpus for further discussion. In dealing with the relational category of prepositions, I am interpreting prototype as an abstract concept, a schematic representation of the conceptual content underlying different instantiations in discourse. The best prepositional use in a sentence is not considered as prototype, but as the central member for other uses. The reason why to take the search for prototypes as the starting point to build a schema is that categorization by prototypes occurs developmentally prior to categorization by schema. The increasing abstractness required by schematic representations suggests that schemata may only be accessible to more sophisticated, reflective language users. Rice (1991:141) suggests that "*networks may initially form around prototypical values*". Langacker (1993: 3) refers to such values as experientially-based *conceptual archetypes* and new nodes may evolve from them. OVER is not included in the experiment; the search for its senses and prototype is mainly based on Lakoff's study (1987: 416-461).

The second step will be that other senses are compared with the prototypical sense or senses to find their similarities. Such similarities will be the bases for higher-level schemata. As mentioned above, it is not claimed here that such schemata always attract a conceptualizer's attention as objects of explicit awareness. The notion of similarity does however imply at least the transitory occurrence of those cognitive events which constitute the perception of common characteristics. As to the present study, if

similarities observed are too vague, or conflict between a prototype and extensions makes a graphic representation impossible, it will be expressed in a propositional form only. It has been pointed above that so long as there is no biological evidence, the two kinds of representations are merely hypotheses, and therefore both are possible.

Thirdly, constructed schemata will be further tested by other examples to see whether it is compatible with specific situations and how it is specified into concrete images. The method to do so is elaboration through valence relations.

Finally, to answer the question how ABOVE, ON and OVER interact with each other in the semantic field, they will be contrastively studied from three angles: prototypes, stative senses and meaning ranges. Prototypes and stative senses are compared by features, while comparison of meaning ranges is made through minimal pair analysis.

2.3.2 Legitimacy of Feature Approach

Most concepts are highly integrated structural complex, or systems, which are more than just the sum of their recognizable parts. Although such holistic gestalts may be describable in terms of their components, it is only imperfectly characterized as such. The examples of the priority of the whole, and the dependence of parts on the prior understanding of the whole, are countless. A schematic representation of the concept BIRD would no doubt include a reference to the possession of feathers; by the same token, [feathered] would probably be listed as one of the defining features of the meaning of BIRD. Taylor (1990) claims that it is highly improbable that a person could know what it meant for something to be feathered unless he has a prior acquaintance with birds. He also argues that there can be no question of a person building up his concept of BIRD by assembling more primitive notions, such as [feathered], for [feathered] is simply "*a shorthand way of representing one of the things that speakers of English perceived to be common to the various creatures to which they have learnt to apply the word bird*" (Taylor, 1990: 525).

It is admitted that a concept must be characterized as a kind of gestalt at some level of description, but there remains some motivation for the feature approach. The motivation is primarily classificatory: a feature like [male] is not arbitrary, but groups together a set of concepts systematically: man/woman, uncle/aunt, boy/girl, stallion/mare, etc. Abstract representations are certainly truer to human categorization system than classic criterial-attribute models, but the feature approach is still legitimate

if it is applied with systematicness as the prerequisite. The feature approach in cognitive linguistics differs from classic criterial-attribute models mainly in two ways.

Firstly, we should try to analyze the features of a unit with reference to the complex relations between them, merely listing the components of a whole is far from enough. A feature only exists in the context of a system which provides the conditions for its manifestation, and where it serves a specific function. For example, feature analysis of UNCLE into [male], [collateral], and [ascending generation] does not eliminate its systemic character, for these features must themselves be described configurationally. [Collateral] and [ascending generation] indicate relative position within a kinship network, hence presuppose the conception of such an entity. The feature [male] perhaps does not, but its value must be construed in systemic terms: the collection of properties subsumed by [male] do not float about unattached within the confines of the UNCLE concept; instead they are understood as pertaining to a specific person, who occupies a particular place within the system of relationships. The unstructured feature bundle [male, collateral, ascending generation] therefore conceals behind its digital facade a highly integrated conceptualization providing a necessary context for the integration of each component. (Langacker, 1987: 19-22)

Secondly, features should not be considered as the criteria of membership in a category. Class membership is not an all-or-nothing affair and there is no sharp distinction between those entities that are in the class and those that are not. Even features of a concept are differentially weighted, some might be essential, others can be over-ridden with varying degrees of facility. Thus, features themselves might display some prototype effects. To take an example "MURDER" from Taylor(1989: 63-64). The concept requires a causal link between a behavior of aggression and a death as its defining feature. But it is far from clear-cut to determine, in any particular instance, whether death occurs as a result of such behavior. If the victim dies instantly of injuries on him, there would be little doubt about whether a death, in the required sense, has occurred. But as the causal chain linking the act of aggression and the death of the victim grows more tenuous, it becomes less and less clear as for what value to assign to the feature. Suppose a person dies many years after having been injured. Can we state with confidence that he is murdered?

In summary, the feature approach is legitimate if it is interpreted as such: features of a unit exist in the context of a system with complex relations among them; features

are not dichotomous in membership of a category. In analyzing distinctions between prepositions, I use the notion of feature as a dimension along which prepositional values vary.

2.3.3 Two Related Senses or a Single General One

Since I will depend on frequency of senses to search for prepositional prototypes and schemata, whether two uses of a lexical form correspond to two related senses or a single more general one is of crucial importance to this study.

There are no strict theoretical criteria for distinguishing the two, but there are some general guidelines. Two senses are distinguished by means of one or several significant distinctions: while this might seem subjective, there is a good degree as to what is significant. For instance, a locative expression will correspond to two different senses if some distinction is generally important to a language user. An addressee who wishes to act upon the description offered by a speaker will normally need a clarification (Herskovits, 1986: 87-88). Thus, *the picture on the paper* correspond to two senses, one implies support between touching entities, and the other implies adherence as if one entity is part of the other. It would be unnatural to take the two as expressing a single sense. First, language users would agree that the distinction between touch and adherence is significant, and, second, conjunctions such as **There is a pen and some writing on the paper* are unacceptable. Such a conjunction represents the application of a classic "identity test" for detecting ambiguity; that is, *Joe and Lucy ate pudding* is assumed to be the result of deleting the first *ate pudding* from *Joe ate pudding and Lucy ate pudding* under identity of meaning in the two conjoined clauses. That it is impossible to delete the first *on the paper* from *There is a pen on the paper and there is some writing on the paper* suggests that the phrase has different meanings in the two clauses; this in turn suggests that two distinct senses correspond to the expressions underlying the conjunction. The sense categorization fits well the sorting that this identity test would induce; it seems that significant distinctions forbid such conjunctions.

It is tempting to account for distinctions between senses in terms of the following principle: context varieties within the same sense should have many properties in common, while two uses across senses would share fewer common properties. Obviously, it is not simply a matter of the number of common properties, but that of their relevance. There is potentially an infinity of possible differences between senses

corresponding to the potential infinity of locative expressions, and some differences are taken to matter, while others are not.

2.3.4 Valence Relations for Elaborating Schemata

"Valence relations" is a term borrowed from chemistry to refer to the combination of two or more symbolic structures into a more elaborate expression. In chemistry, valence relations between atoms are based on the sharing of electrons, while valence relations uniting linguistic expressions depend in similar fashion on the sharing of elements. Certain substructures in common enable two component expressions to be integrated to form a coherent composite expression. The relations between the shared substructures are *correspondences*. As a component structure, a noun[1] usually profiles a thing that is not limited to real world entities but designates cognitive events, a verb profiles a process, and a preposition profiles an atemporal relation[2] (Langacker, 1987: 214-243). For the most part, a composite structure simply inherits the profile of one of its components, i.e. the *profile determinant.* (Langacker, 1987: 277-327)

Though trajector/landmark belong to the internal structure of a relational configuration, it does "*provide fulcrum for syntagmatic combination*" (Langacker, 1987: 231-236). Langacker makes a comparison between trajector/landmark distinction and traditional subject/object distinction and concludes that subjects and objects elaborate the trajectors and landmarks of relational configurations. In well-formed utterances, the trajector always coincides with the subject of the relation and the landmark corresponds with its object (Vandeloise, 1991: 21-24). This is not the criterial property of a subject or an object but rather symptomatic of the special salience that trajectors have by virtue of their roles as relational figure and landmarks as relational ground. For instance, in the sentence *Helen left quickly,* there are only one subject and zero object. The population of trajectors and landmarks is considerably larger. *Left* can be attributed an internal landmark despite the absence of an elaborating nominal (cf. *Helen left the room*). *Quickly* has neither a subject nor an object in the usual sense, but it does have a trajector and a landmark: its trajector is a process, elaborated by *left*; this process is situated within a certain region along a scale of rate, which functions as an unelaborated landmark (Langacker, 1987: 232- 233). Therefore, the terms subject and object are

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[1] Nominal phrases or even longer expressions, and pronouns are all categorized as nouns.

[2] Aiemporal relations refer to those that are not seen as evolving in time but perceived holistically.

normally reserved for overt noun phrases with specifiable roles in clause-level syntax. By the same token, in head/modifier constructions, a head is a type of trajector, whereas the relation designated by the modifier constitutes the landmark. Trajector/landmark organization is pervasive in human cognition, and naturally operative in language.

For conciseness, I will use instances of head/modifier construction to demonstrate the elaboration of schemata in this study. To be more specific, instances will be prepositional phrases modifying a noun or a verb. The profile determinant will always be the head of such composite structure because a head is cognitively more salient than its modifier .

Chapter Three The Study of *Above, On* and *Over*

3.1 Case study

3.1.1 Experiment on *Above* & *ON*

The task for this experiment is Sentence Generation Task. The underlying logic is that prototypical uses should be more easily recalled and therefore produced with the greatest frequency; yet non-prototypical uses associated with the prototypes should also emerge, but at a lower rate (Taylor, 1989: 51-54; Dirver & Verspoor, 1998: 31). This has been proved by a series of empirical studies. Rosch's priming experiments (Rosch, 1975) suggest that a category name activates the names of more prototypical members of the category and deactivates the more marginal members. If people are asked to name examplars of a category, they tend to mention the more prototypical members first. Data on the naming of examplars had been obtained by Batting and Montague for fifty six categories (Taylor, 1989: 45-46). When asked to list members of the categories *furniture*, *weapon*, *bird* and *sport*, their subjects named in first place *chair*, *gun*, *robin* and *football* more frequently than other members.

For convenience, the experiment will be labeled Experiment 1 hereinafter.

Subject: There were 23 subjects participating in the experiments. All are English native speakers from America and Canada aged over 13. Because I could not get enough native speakers in China, Mr. Forbes, my former teacher, helped me to carry out the experiment in Livingston, Montana, U.S.A., by inviting his friends, neighbors and relatives to answer the questionnaires. He was also the controller of the experiment. To arrange a time and a place for so many people in various lines to meet together is not an easy thing, so they finished the questionnaires by several groups. Fourteen of them did real-paper questionnaires, and nine did the job on computer and emailed their answers to me directly.

Method: Each subject was given a piece of paper, including those that used computers. On the top of the paper is the title "Questionnaire". Three requirements are listed below. Some space has been left below each requirement where subjects could write down their answers. The first two requirements belong to the sentence generation task of Experiment 1, and the last is the comparison task of Experiment 2. Here we will

focus on the first ask. For this task, subjects should generate five or ten sentences containing the preposition *above* by the first requirement. In the second requirement, they were asked to generate five or ten sentences containing the preposition *on*. They were told for each preposition they would have about ten minutes if ten sentences were required, otherwise five minutes for five sentences, because some subjects thought that ten sentences were too much for them. Finally, I obtained 180 uses for ABOVE and 181 for ON. These numbers are not the same as the numbers of responded sentences, because some subjects gave sentences more or less than required and some sentences contain more than one preposition.

Preliminary analysis: The prepositional uses obtained will be classified into spatial domain, temporal domain, abstract domain, and phrases. All those uses expressing locative relations in the physical world are included in the spatial domain. These spatial uses will be exploited in the later analyses. Phrases mainly refer to verb-particle composites. Since lexical prepositions and particles can appear in the same syntactic order, i.e. verb + prepositional form + NP, it is necessary to postulate principles to distinguish spatial prepositions from others, because whether a form is listed as a spatial preposition or not will affect the final results of frequency counting and then affect decisions on prototypes. Three principles are exploited:

Principle 1: If a prepositional form can be located either before or after the NP within the structure "verb + prepositional form + NP" without causing any syntactic anomaly or semantic difference, the prepositional form is a particle.

(9) a. Please turn on the light.
b. Please turn the light on. (Particle)

Principle 2: If a modifying element can be inserted directly in front of the prepositional form, the form is lexical; otherwise it is a particle.

(10) a. He lives on the hill.
b. He lives right on the hill. (Lexical preposition)

(11) a. I decided to put on a sweater..
b . *I decided to put right on a sweater. (Particle)

Principle 3: Our goal is mainly to extract spatial prepositions, if the structure "prepositional form + object" can be replaced by "there" without seriously changing the original meaning or making it anomalous, the prepositional form is lexical and spatial; otherwise, it is not.

(12) a. My husband was sitting on a rock.

b. My husband was sitting there. (Spatial Preposition)

(13) a. She tried on a new dress.

b. * She tried there. (Particle)

Those lexical uses that are originally spatial but express nonspatial meanings in responded sentences are treated as temporal or abstract. Though prepositional forms responded by subjects are efficiently classified according to the above principles, it is not claimed here that these principles are necessary and sufficient to classify all the prepositional forms in context.

Table 1 represents frequency of uses in each type of domain. The results suggest that spatial uses are privileged for the two prepositions, though temporal and abstract uses are also included by speakers in the lexical categories of these items to varying degrees.

Table 1. Frequency of response types for each preposition in sentence generation task

	Spatial	Temporal	Abstract	Phrases	Total	Percentage of Spatial
Above	146	0	34	0	180	81.11%
On	130	9	17	25	181	71.82%

All the sentences listed hereinafter as examples of a specific prepositional sense are taken from the sentences responded by the subjects in Experiment 1, except otherwise mentioned.

3.1.2 Above

English prepositions are usually able to profile a relation between things designated by nouns, or between a thing and a process designated by verbs, ABOVE is no exception.

(14) He saw a great bird above them.

(15) The bird is flying above the treetops.

Are these uses of ABOVE distinct as they profile different trajectors, a thing in (14) and a process in (15)? The key is to see whether this difference is cognitively significant or not. Suppose "them" in (14) stands for trees, so we are in a better position to compare the two sentences. When we say *a bird above a tree*, it is usually the case that the bird is flying higher than the tree, because if it is perceived as standing on a branch, we will not

use ABOVE and it will be said as *a bird in a tree*, because it is in the region of the tree. Conversely, for (15), if asked where the bird is flying or just where the bird is, the answer is no doubt *above the treetops*; the prepositional phrase designates an area for the preceding process. Though the trajector changes its position in relation to the landmark, it is portrayed as constant in location. Therefore, the difference of the two types of trajectors does not affect the meanings so much as to form two senses. ABOVE profiles stative relations between trajectors and landmarks. "Stative" here does not preclude that trajectors might be in motion, but no motion is attributed to them by the semantic content of ABOVE.

The spatial uses of ABOVE obtained through Experiment 1 will be classified into the following senses according to degree of similarity. A sense governs an infinite number of specific uses, so it is abstract, general and schematic.

Sense 1: Trajector (TR) is at a higher level than landmark (LM).

a) TR profiles a thing:

(16) The bells rang in the tower above the church.

(17) The books were stacked one above the other.

b) TR profiles a process, LM designates its scope.

(18) There are many satellites orbiting above the earth.

(19) Above her head a spider waves its web..

Sense 2: LM is a certain measure criterion. TR is higher than LM.

(20) The habitat of mountain goat is above the treeline[3] on the mountain.

(21) The peak of Mount Everest is many meters above sea level.

Sense 3: TR is to the north of LM.

(22) Alberta lies above the forty-ninth parallel of latitude.

(23) The expedition traveled above the Arctic Circle.

Sense 4: TR is the information that precedes LM in written statements.

(24) The above-mentioned situation will not happen again.

(25) The body of the letter was above his signature.

Next, frequency of each sense that appears in the responded sentences will be counted.

[3] Treeline is the limit above which trees do not grow on mountains or in high latitudes. (Watson, 1976: 1175)

Table 2. Frequency of response types of ABOVE's senses

Above	Sense 1	Sense 2	Sense3	Sense 4	Total
Frequency	131	5	6	4	146
Percentage	89.73%	3.42%	4.11%	2.74%	100.00%

Sense 1 is far more frequently produced by the subjects, so I consider it to be the prototypical sense of ABOVE for the majority of English speakers. Other senses differ from it in that they are limited to narrower and more specific contexts. Sense 2 takes fixed criteria for vertical measurement, Sense 3 is for the north direction, while Sense 4 is for information arrangement in a text. These three types of contexts are common in our life, frequently used, and elaborate the preceding *above* to a specific domain. Even if *above* is followed by the same noun, whether they belong to the same sense can be detected by the "identity test" mentioned in 2.3.3.

These senses are connected with Sense 1 by some degree of similarity. It can be found without many difficulties that all of them share a kind of up direction that is not necessarily vertical. TR and LM are compared along this dimension. In Sense 2 people categorize the criteria of "sea level" and "tree line" as the origin of the up axis, the projection of TR on the axis is of some distance from the origin; so this is a special case of vertical up axis. In Sense 3 the north direction is up. A natural explanation seems to be that it is so stipulated in geography and on maps. The actual reason is just the other way around: people conceptualized "the north" as up firstly and then exploit it in geography and map-drawing. According to Shepard & Hurwitz (1985), there is enough evidence showing that the earliest maps tended to choose as the up direction those sites of geographical prominence or cultural significance, such as Mecca, Jerusalem, and where the sun rises, which are not necessarily in the north. Later on with wide application of compass and with the development of sea navigation, people began to use the north-south pole as fixed reference; since most navigators were in the north hemisphere, the north gradually became the up direction. In Sense 4, preceding content in a text is up. A human being in canonical position defines six half-line axes with origin at him/herself. These axes are mirrored to paper where people habitually write from left to right, from top to bottom, and page after page, thus a piece of paper seems to receive a frame of reference on itself. Early appearing content naturally occupies a higher position along the up axis. Therefore, the top schema for ABOVE in the spatial

domain is that TR is higher than LM along the up axis.

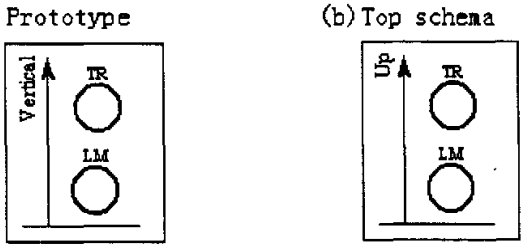


Figure 3. Schemata for Above

We will see how this schema is elaborated into rich images of the phrase *the apple above my reach. Above* here profiles the higher relations in the vertical direction, so the top schema is elaborated into prototypical value. At the first level sketched in Figure 4, *above* combines with *my reach* to form the prepositional phrase *above my reach. Above* profiles a relation between two things at different positions along the vertical axis, construing the lower of these entities as a landmark for purposes of situating the other, the trajector. Being a nominal expression, *my reach* profiles a thing; for diagrammatic convenience, its complex semantic specifications are abbreviated by an outline of its shape. Integration is always effected by correspondence established between subparts of the component structures; these are indicated by broken lines. In a prepositional phrase, the landmark of the preposition corresponds to the profile of the object nominal. Thus, when corresponding entities are superimposed and their specifications merged, the composite structure, *above my reach*, inherits the specifications of *my reach* for the characterization of its landmark. *Above my reach* is then left with a specified landmark but a highly schematic trajector. This is rectified at the second level of constituency, where *above my reach* combines with *the apple*. As is typical in a modifying construction, their integration is effected by a correspondence between the modifier's schematic trajector and the profile of the modified element. By superimposing corresponding entities, one obtains the overall composite structure for *the apple above my reach*, shown at the top.

Two other aspects of this diagram need to be exploited. First, the profile determinant, from which the composite structure inherits profiling, is indicated by means of the heavy-line box enclosing it. Second, it is usual for one component structure to elaborate a schematic structure of the other component; elaboration is represented by a solid arrow, and the elaborated substructures is marked by hatching.

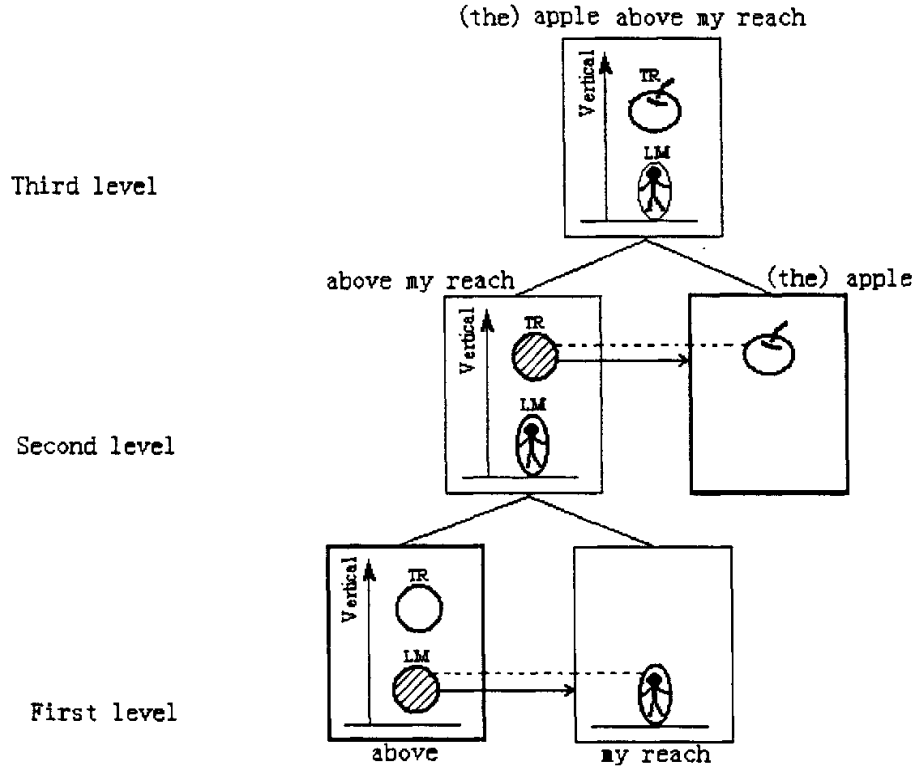


Figure 4: Elaboration of ABOVE Schema by *the apple above my reach*

3.1.3 On

Like ABOVE, ON can also profile atemporal relations between two things, or relations between a thing and a process. Let's compare these sentences:

(26) There was snow on the car.

(27) The cat is on the mat.

(28) The cat sat on the chair. (Entailment: The cat was on the chair.)

(29) A man walked on the sidewalk.. (Entailment: The man was on the sidewalk.)

All these prepositional uses define a region where a thing occupies or a process takes place. No matter what kind of verbs a ON-heading preposition modifies, as "be" verb in (27), *sat* in (28) and *walked* in (29), it profiles a constant location of the trajector and has the same type of entailment. Thus, ON mainly profiles stative relations.

The uses of ON got from Experiment 1 can be classified into the following six types of senses:

Sense 1: TR is vertically higher than LM; TR is supported by LM.

"Support" is a naive concept. By supporting, weight of an object presses or pulls upon another, the supporting object then resists the push or pull.

a) TR profiles a thing

(30) The flowers are in a vase on the table.

(31) There is a hat on my head.

b) TR profiles a process, LM designates the scope of this process.

(32) Bicycles can be ridden on the trails in the woods.

(33) The plane landed on the runway.

Sense 2: TR is not in the vertically higher position of LM, but still supported by LM.

a) TR is fastened to LM.

(34) The picture on the wall hung too low.

(35) She hung her purse on the hook.

b) LM is a body part; TR is something people wearing or carrying.

(36) The gloves were on my hands.

(37) I wear glasses on my face.

Though a) mainly expresses the meaning of hanging, while b) for wearing and carrying by human body, the two usages share the key attributes that TR is contiguous to LM and supported by LM so that TR will not fall down. An object is supported by another if its weight presses or pulls upon it; the supporting object then resists the push or pull. These naive ideas about the ideas of support are the only ones relevant to semantic structure.

Sense 3: a) TR is perceived as adherent to LM.

(38) the label on the box (From Herskovits, 1986: 141)

(39) There were water stains on the floor.

b) TR is perceived as a part of LM.

(40) The car had a scratch on its fender.

(41) The paper has writing on it.

Sense 4: LM is a geographical area. TR is within this region.

There are a number of geographical locations with which one may or must use ON to indicate that an object or an event is located in them. Those geographical locations are: island, beach, coast, promontory, cape, earth, ranch, farm, campus, mountain, any landing or playing field, and blocks.

(42) The ball team is on the field.

(43) The animals were kept on the farm.

Sense 5: LM is a projective region. TR is located in this region.

By projective region I refer to left, right, top, front, back, etc.

(44) Seat the guest of honor on the right of the hostess.

(45) We drive on the right side.

Sense 6: TR is to the direction of LM.

(46) The cat pounced on the mouse.

(47) to sail on a southerly course. (From Dalgish, 1997: 896)

Frequency of each sense responded in Experiment 1 will be counted in Table 3.

Table 3. Frequency of response types of ON's senses

On	Sense 1	Sense 2	Sense 3	Sense 4	Sense 5	Sense 6	Total
Frequency	98	13	6	4	8	1	130
Percentage	75.38%	10%	4.62%	3.08%	6.15%	0.77%	100.00%

Sense 1 has a noticeable privilege over the other senses, so I take it to be the prototypical sense of ON. In addition to the responded uses by subjects, there are also other uses::

Sense 7: LM is a large vehicle and TR is carried by it.

(48) The luggage is still on the plane. (From Herskovits: 1986: 144)

(49) He read the book on the boat . (From Rauh, 1991: 169)

Sense 8: TR is contiguous to the edge of LM.

(50) castles on the Rhine (From Watson, 1976:780)

(51) a house on the lake (From Dalgish, 1997: 896)

Trajectors and landmarks in sense 8 are under some restrictions: the landmarks fall into three categories: open regions, bodies of water, and all manner of pathway; the trajectors must be contiguous to the edge of these areas, but also outside them; the landmark must be attached and relatively large (Herskovits, 1986: 48).

Let's compare the senses to find their similarities. Since similarity is a matter of degree and varies for individuals, and I have no empirical data on acquisitional order, the relations between senses described here are only to show that the senses are not discrete but connected as an integrated continuum. Their actual positions in schematic networks need further empirical studies.

I take Sense 7 as a special case of the prototype, Sense 1, because it is consistent with the values of Sense 1 in every aspect except that it is applicable to very specific trajectors and landmarks. Though the vehicles have interior regions, but the concept of containment is irrelevant here, the attribute that the vehicles have a relatively large surface or floor to support travelers is more salient. If the vehicle is small, surrounding becomes more salient, and ON becomes less acceptable: **the customer on the taxi*, **the fisherman on the canoe*. Sense 2 is semantically close to Sense 1 but differs in that trajectors are not necessarily in the vertical up position of landmarks. From these two senses we can abstract schema ON', as diagrammed in Figure 6 (a), in which the trajector is contiguous to the landmark and supported by it in our naive physics. "Support" is marked by an arrow going from the landmark to the trajector.

Trajectors and landmarks in Sense 3(a) are so intimately joined that it is sometimes impossible to separate one from the other, and the relation shades into a "part-of" relation, as Sense 3(b). In this sense the landmark serves as a background to the trajector. Since background is always connected with contiguity and support, Sense 3 also elaborates the schema ON'. Locations in Sense 4 are very general; in the great majority of cases, such general locations imply also contiguity and support.

Landmarks in Sense 5 are all projective regions, in another sense, open regions. Sense 8 emphasizes approximation of a trajector with the edge of a landmark. In these two senses, the concept of support is relatively unimportant but not to the degree of irrelevance; there are still some resemblance to a situation of support: the trajector must be larger than the landmark, and acts as a background to it.

Among all the senses, Sense 6 might be the least similar to ON'. Its trajector and landmark are not contiguous and no conspicuous support relation exists between them. Diagrammatically, this contrast can be observed by contact and non-contact in Figure 6. However, I still hold that they are similar because the concept of support here is a naive one. Johnson (1987: 42-48) describes the important role played by the notions of exertion of force and resistance to force in structuring both grammar and some lexical domain. For the prototypical senses of ON, the force is the weight of a trajector. While for ON in Sense 6, force is the effects or energy of a motion and the landmark is the receiver of this force. Therefore there is a weak sense of support in Sense 6, marked by the arrow with broken line in Figure 6.b, this sense is an extension from the prototype ON'. Since these two schemata conflict in that one contains the relation of contiguity

and the other does not, which is impossible to be represented in diagrams, I will put it in a propositional form: Schema ON" profiles a support relation between the trajector and landmark with the landmark supporting the trajector. Finally, we come to such a skeleton network as Figure 5.

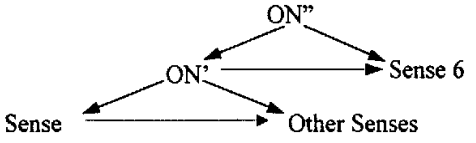


Figure 5. Schematic network of ON

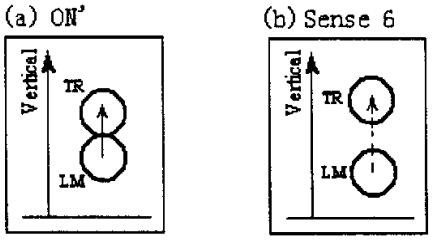


Figure 6. Schemata for ON' & Sense 6

In Figure 6, "vertical" arrow is not to indicate the relative position of the entities, but imply that the support relation from LM to TR prevent LM from falling down against the gravitation.

Let's see how the highest schema ON" is elaborated into images designated by the phrase *walk on the bridge*. Since the action of walking must be supported by something, here by *the bridge*, it is certainly contiguous to *the bridge*, so NO" is specified into ON'. Sketched in Figure 7 is the semantic integration of *walking on the bridge*. At the lower level of constituency, *on* combines with *the bridge* to form the prepositional phrase *on the bridge*. On profiles a relation between two entities, construing the landmark supporting the trajector in a contiguous manner along the vertical direction. The landmark of the preposition corresponds to the profile of *the bridge*, when corresponding entities are superimposed, the composite *on the bridge* then left with a highly schematic trajector. This is specified at the second level of constituency where *on the bridge* combines with *walk*. "Walk" profiles a process involving a change of locations along the temporal axis. By superimposing the schematic trajector and the profile of *walk*, one obtains the overall composite structure for *walk on the bridge*, shown at the top.

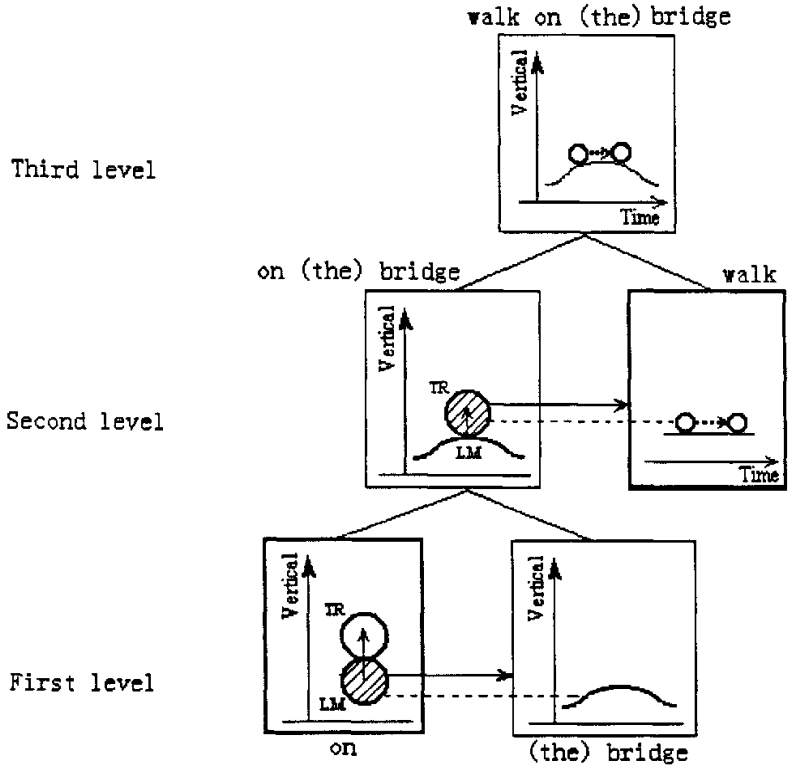


Figure 7. Elaboration of schema ON' by *walk on the bridge*

3.1.4 Over

The present study on OVER will be partly based on Lakoff's study (1987: 416-461), especially the search for its prototypical sense, which is also the reason why I did not include OVER in Experiment 1. Sentence examples in this section are also his, except otherwise mentioned.

As a matter of fact, Lakoff's study is essentially a restatement of Brugman's (1983). It claims that *over* is highly polysemous and its interrelated senses form a radial category. Complicated uses of *over* are classified into three senses: *above*, *above-across* and *covering*. The central schema for *over*, encompassing the elements of "above" and "across", embodies a relation between a trajector and some unspecified landmark. Each sense is connected to this prototype either directly or through a series of intermediaries; members thus form chains departing from the center and radiating outward. Lakoff is primarily concerned with the nature of links between nodes, which he characterizes in terms of links of instantiation, similarity and transformation. He is fairly unconcerned

about the number or nature of the nodes themselves (Vandeloise, 1990: 423-430). There does not appear to be much analytic control on the formulation of separate senses especially when all the proposed senses are spatial and some differs in fairly minor ways. Moreover, it is not clear how he arrived at the prototypic sense that forms the core in his network for *over*, embodied by *The plane flew over.* Since there is no explicit mention of a landmark in this usage, it appears to be rather schematic.

I did not include OVER in the sentence generation task to search for its prototypes, because I agree with Lakoff on the view that the above-across sense is prototypical for OVER, in another word, motion or moving attribute is more salient for this preposition. I have two reasons to support this view.

Firstly, recall Rosch's notion of basic level terms. Basic level terms maximize category information and they are the level of distinctive actions: while categories might merge into each other at their boundaries, prototypical members of basic level categories are kept maximally distinct (Taylor, 1989: 46-50). Suppose we regard OVER in the sense "vertically higher than, not in contact with" (above sense) as a basic level term for the description of spatial relations. There are good reasons for this view. OVER, in this sense, enters into a number of simple, and perceptually highly salient contrasts with other locative prepositions, which likewise can be said to encode basic level relations. For example, the contrast between "higher than" and "lower than " is realized by OVER vs. UNDER; the contrast being "higher without contact" and "higher with contact" distinguishes OVER and ON. There is, however, a problem, and that is the existence of ABOVE. ABOVE has a much more restricted range of senses than OVER. But the prototypical senses that I have identified above coincides pretty closely with the putatively central meaning of OVER. Thus, existence of the two, partially synonymous lexical items, conflicts with the very notion of a basic level term. It would be unrealistic to claim that OVER in the presumed central sense maximize category distinctiveness. These problems would be eliminated by the selection of above-across sense as prototypical.

Secondly, there is empirical evidence showing that motion sense is prototypical to OVER. Evidence emerges from **Experiment 2.**

Experiment 2 took the same subjects as those of Experiment 1. The task was for them to describe the differences between the meanings of ABOVE, ON and OVER. The requirement was printed some distance below the first two task requirements on the

same piece of paper. Two subjects did not give their answers, as I understand it, primarily because they feel that the three are so close in meaning that their complicated relations are beyond a few sentences. Therefore, I obtained totally 21 answers for this task, and some are complemented by pictures. All of the comparisons responded are made in a feature-analysis fashion. These attributes and the frequencies that they are responded are listed in Table 4. Feature or attribute seem to be the dimension along which values of concepts vary, and it offers a way to contrastive studies.

Table 4: Frequency of each responded attribute in the comparison task

	Contact	No Cont	Support	Stative	Motion	Extend	End	Cover
ABOVE	--	6	--	2	--	--	--	--
ON	13	--	2	3	--	--	--	--
OVER	2	1	--	2	10	3	1	3

Contact: There is contact between TR and LM; similar expressions are touching, approximation, etc

No Cont: There is no contact between TR and LM; a similar expression is distance;

Support: LM support TR; a similar expression is "hold up".

Stative: The preposition profiles a relation of state.

Motion: TR implies motion or movement; similar expressions are moving, dynamic, etc.

Extend: TR extends from this side of LM to the other side.

End: To get the location of TR, an observer has to follow the path to the end.

Cover: TR covers LM.

It is not difficult to notice that the attributes, such as "contact", "no contact" and "support", appear only in the prototype schemata of ABOVE and ON, which further proves that the attributes are cognitively salient for speakers and that concepts tend to have maximal distinction for the prototypical terms at the basic level. There are also attributes "motion", "extension", "end" and "covering" that are absent in ABOVE and ON. I suggest that these attributes are unique to OVER and make it distinct from the other two, and thus contribute to the values of its prototype schema. Ten subjects among the 21 explicitly say that OVER to them means "movement" or "motion" more.

For the above two reasons, I conclude that motion sense is prototypical to the schematic potentials of OVER.

Lakoff gives nine sentences for this sense. His sentences are:

(52) The plane flew over.

(53) The birds flew over the yard.

(54) The plane flew over the hill.

(55) The bird flew over the wall.

(56) Sam drove over the bridge.

(57) Sam walked over the hill.

(58) Sam lives over the hill.

(59) Sausalito is over the bridge.

For Lakoff (1987:420), the schema for (52) is "*minimal specification interpretation*", schemata for (53)~(58) are "*full specification interpretation*" by adding information, in particular by specifying the nature of landmark and whether or not there is contact. By specifying the properties of trajectors and landmarks, Lakoff includes attributes of the entities like "extended" and "vertical", and this means contextual information in his analysis. So, the distinction between the two interpretations equals that between context-independent meaning and context-dependent meaning. One of the main questions concerning the semantic information in a lexical entry is the role of context. Should we have contextual information in the lexicon or is it possible to give a context-independent meaning of lexemes? It is assumed here that prepositions have a meaning independent of context. It is the meaning that constitutes the basis for contextual meaning, i.e. it forms the basis for the actual uses of a lexeme.

Lakoff uses diagrams to represent the schemata, but some of the diagrams are not without problems. His drawing for (52), as Schema 1 in Figure 1, is placed at the center of the network describing *over* and plays an essential role in the analysis of *over*. Its graphic representation is impossible. Indeed, this schema indicates non-contact between the trajector and landmark, but it is also used to generalize instances with contact. It is impossible to represent two entities as at the same time touching and not touching each other. Lakoff argues that the schema is "*neutral*" on the issue of contact (1987: 420). Here, his embarrassment shows that it is sometimes impossible to graphically represent an image schema found in mental representation. A careful observation of the sentences (52)~(59) reveals that contact or non-contact is more decided by the dynamic trajectors than by OVER. In (52)~(55), trajectors are a process *fly*. Flying in the sky certainly does not need to be supported by another objector, therefore there is no contact between trajectors and landmarks. In (56)~(58), the verbs are *drive, walk, climb, live*; and *is* in

(59) is for the location of a person. People usually drive and walk on the road, climb a mountain, a tree, or a wall to a position of some distance from the ground, live in a house or a building supported by the ground, and more conspicuous we always stand on some object, at least on the earth. So all these actions or states imply contact with a supporting region - landmark. Therefore, contact is a part of the meaning of the verbs. It seems implausible to analyze it as an inherent feature of OVER. In Figure 8, there is no contact between the trajector and landmark, the path that the trajector moves along is marked by the horizontal arrow.

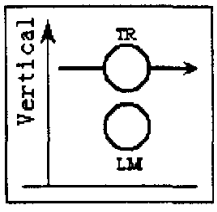


Figure 8. Schema for motion sense of OVER

In (53) and (54), *over the yard* and *over the hill* denote paths followed by trajectors. A related sense is (58), where *over* is again a place preposition, denoting not a path traced by the trajector but the end-point of a path which an observer would have to follow in order to arrive at the trajector. It is the logic of the PATH schema functioning here that spatial trajectories always have a component of end points (Johnson, 1987:113-117; Hilferty, 1999).

In (57), the trajector traces a path not only vertical to but in contact with the landmark. When walking over a hill, a person first ascends, reaches the highest point, and then descending, so *over the hill* denotes an arc-like path. Sentence (60) is closely related to this new element:

(60) The dog jumped over the fence.

The curved, arc-like path of the trajector is again in evidence. Here a further element is making its appearance, i.e. the notion of landmark as an obstacle that the trajector must surmount by first ascending, then descending.

Here are another two sentences given by Lakoff :

(61) The power line stretches over the yard.

(62) Hang the painting over the fireplace.

The meaning of *over* in (61) seems to be an intermediate one that resembles motion senses in path and resembles (62) in the stative state of trajectors.

So in addition to the motion or dynamic sense, OVER has a stative sense. The two senses share common characteristics: in both senses, trajectors are vertically higher than landmarks. But there are also salient differences between them. The stative sense involves no movement and it does not permit contact between the trajector and landmark, as shown in Figure 9. One might raise an objection here. *Over* in (58) and (59) means no change of the trajectors' locations, yet contact does exist between the trajectors and the landmarks. As I understand it, this is only a superficial controversy. As pointed out in section 2.1.2, a stative relation is formed by summary scanning while a dynamic one by sequential scanning. In (58) and (59), in order to arrive at the trajectors, the sight of an observer has to follow a path to its end-point. This is a sequential scanning. Therefore, this use of OVER is governed by its motion schema rather than by stative sense.

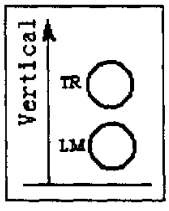


Figure 9. Schema for stative sense of OVER

Other uses of OVER denote a covering relation. As in:

(63) The board is over the whole.

(64) The guards were posted all over the hill.

(65) I walked all over the hill.

In (63), the covering is complete; the landmark has become invisible to an observer. For (64), Lakoff (1987: 428) explains that multiple entities are naturally perceived by human vision as masses; it is this perceptual experience that forms the similarity between (63) and (64). These two uses are also similar to *over* of (62) in the stative state of trajectors. And (65) is related to (57), because a person who *walks over the hill* traces a path on the hill. If he *walks all over the hill* we can think of the path as being so convoluted that it virtually covers the total area of the landmark (Lakoff, 1987: 429). In all these sentences, the trajectors, by covering the landmarks, are located vertical to them. But covering sense does have variants in which a trajector need not be vertically higher than a landmark (Lakoff, 1987: 429), e.g. *a veil over her face*, the up axis for comparing the positions of *veil* and *face* becomes horizontal. Therefore, the schema for

covering sense of OVER is that the trajector is higher than the landmark with reference to the up axis, as shown in Figure 10.

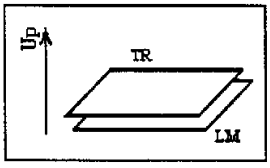


Figure 10. Schema for covering sense of OVER

So far, we have discussed the three senses of OVER through a series of its uses. The prototypical sense is embodied in sentences like *The birds flew over the yard.* The stative sense is related to this prototype by the trajector's state of being vertically higher than the landmark. The covering sense exists both in dynamic uses and stative uses. It resembles the prototype and the stative sense in that a trajector is higher than a landmark though not necessarily in the vertical direction. Obviously the property of a higher position is shared by the three senses, and thus forms the top schema for OVER. One thing needs to be emphasized is that this schema is not of distinctive value against ON and ABOVE, it is not cognitively salient; so it is boxed by dotted lines in Figure 11. Since Lakoff's study on OVER contains a number of drawings on its images in concrete situations, I will not transform the schemata through valence relations again.

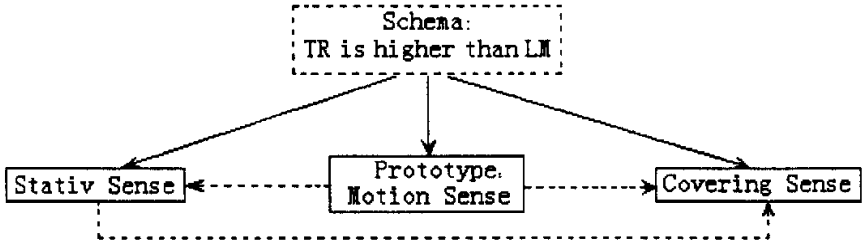


Figure 11. Schematic network of OVER

3.2 Contrastive Study of Above, On and Over

Above analyses indicate that the three prepositions all contain the sense of a trajector's being higher than a landmark along the reference of the up axis. This makes it possible to group them together as a semantic field. Though we cannot find a monolexical term for this field, I hold that the concept of "upper relation" is cognitively important to us, because it is a schema coming from our body experience and recurrent in our daily life. Then a problem comes as how the internal structure of the field looks

like, or what each of the three prepositions contributes to the field. I suggest approaching the problem by a contrastive study of the three. I will do this by comparisons from three angles, i.e. prototypes, stative senses, meaning ranges.

3.2.1 Comparison of Prototypes

Since prototypes maximize the distinction between concepts, it is natural that the present comparison begins with prototype schemata (PS for short). Because there are more than one prototypes in some networks of the three prepositions, it needs to be pointed out that prototypes here refer to those schemata at the basic level of network hierarchies. More specifically speaking, the PS for above is that TR is at a vertically higher level than LM without contact; ON's PS is that TR is vertically higher than LM and supported by LM; OVER takes a motion sense as its prototype, in which TR traces a path higher than LM.

The characteristics shared by the three PSs are fairly noticeable. The trajectors are always in the vertically upper position than the landmarks, which is also the reason why they form a semantic field. On the other hand, their differences are not neglectable. Their values vary along two dimensions. One dimension is whether the trajector and landmark contact or not; the other is how the composite whole of a preposition and its landmark modifies a trajector that profiles a process.

Let's consider the dimension of contact or non-contact first. ON contains the concept of support in its PS. In our naive physics, for an entity not to fall down, it must be supported by another, and touch between the two is unavoidable. So, "contact" is a prerequisite for ON. Conversely, ABOVE takes it as its prerequisite that there should not be any contact between its trajector and landmark. It would be problematic for it to appear in a context where a trajector touches a landmark. For instance, **Sam walked above the bridge,* contact nuance in *walk* conflicts with the non-contact one in *above.* As for OVER, things are not a simple yes-or-no matter. Though it contains non-contact in its PS, this can be altered by its context. In *Sam walked over the hill,* there is contact; in *The bird flew over the hill,* contact does not exist. As is claimed above, whether contact exists or not is decided by the head preceding OVER.

The second dimension is concerned with the stative or dynamic nature of these prepositions. Since this has been discussed quite a lot, here is only a short summary. It has been shown above that no matter what kind of verbs precede ABOVE or ON, the prepositional composites always denote constant regions of these activities. ABOVE

and ON are stative in nature. On the contrary, the prototype of OVER is dynamic. When a dynamic verb precedes OVER, the trajector is a process tracing a path above the landmark; when the landmark is arc-like or vertical, it becomes an obstacle for this trajectory; when the verb head is stative, in order to arrive at the trajector an observer should trace such a path to the end of it.

3.2.2 Comparison of Stative Senses

3.2.2.1 Vertical Distance Between TR & LM

ABOVE and ON are more stative in nature and OVER covers a wider semantic area than stative relations, these facts are out of question now. Therefore, the three prepositions are more comparable in stative senses. First consideration should be given to the vertical distance between the trajector and landmark implied by each preposition.

Though contact is a prerequisite to ON, it is not necessary that a trajector and a landmark must touch each other. Support might be indirect, i.e. the two objects may be separated by other objects, thus not contiguous (Herskovits, 1986: 142). For instance, *the book on the table.* There might be a table cloth between the book and the table. So, strictly speaking, ON implies approximation of the trajector and landmark rather than zero distance between.

Concerning the distance between a trajector and a landmark in stative senses, OVER and ABOVE are very similar. But OVER has a further meaning nuance. As two subjects in Experiment 2 pointed out explicitly, OVER means a shorter distance between the trajector and landmark than ABOVE does. I am more likely to be disturbed by noise from people living over me than by those who just live above me. The idea of the trajector's influencing the landmark comes out in (66).

(66) Pull the lamp down over the table. (From Taylor, 1989: 111)

This *over* cannot be replaced by ABOVE, because (66) means that the speaker wants the lamp closer to the table so that the table is illuminated by the lamp; the result of the order is a shortened distance between the two entities. Conversely, ABOVE is a preposition suggesting, if anything, an absence of interaction between the trajector and landmark. Along the vertical axis, the distance between the two seems to extend with no restriction, e.g. *Satellites fly far above the earth.*

For the three prepositions, the order is ON < OVER <ABOVE with regard to the vertical distance between the trajector and landmark.

3.2.2.2 Horizontal Distance Between TR & LM

The value of horizontal distance is another minute difference between the three. Here I am mainly concerned with the situations where the reference axis is vertical up. Those situations where the axes are not vertical can be perceived as results of axis rotation. Generally speaking, a trajector and a landmark related by ON or OVER are on the same vertical line, their horizontal projections coincide. But this is not necessarily the case with ABOVE.

For ABOVE, the spatial discrepancy between the trajector and landmark has a horizontal component in addition to the vertical one (Langacker, 1987: 223-225). Under normal circumstances, the use of ABOVE is most felicitous when one participant is precisely underneath the other; this construal can be made explicit by such qualifiers as *right, precisely, directly,* and *exactly.* As is often the case, however, conventional usage permits a certain extent of deviation. ABOVE is readily tolerated for the configuration of Figure 12, provided that the horizontal divergence of the trajector and landmark is not too great. When their horizontal divergence becomes substantial[5], categorizing their relationship as an instance of ABOVE is problematic: ?*The picture is above the mantel on the wall and twelve feet off to the side of it.* Thus, in an optimal instantiation of ABOVE, horizontal projections of the trajector and landmark coincide; conventional usage also sanctions relations where two entities fail to be on a vertical line, provided that one is plausibly construed as located in the neighborhood of the other. Therefore, ABOVE denotes only the notion of a different level, it is of no relevance whether the two entities are arranged in a directed vertical line or whether they are shifted to either side (Wege, 1991:285-288).

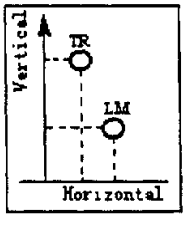


Figure 12. Horizontal and vertical components of ABOVE

In summary, for ON and OVER, horizontal projection of the trajector normally coincides with projection of the landmark, thus the values of their horizontal distance is

[5] Whether the divergence is substantial or not is decided by the relative size of TR and LM, or by what the speaker is trying to communicate.

zero; for ABOVE, horizontal projections of the two diverge, and the varying scope for deviation value is bigger than zero but not to the extent where horizontal distance becomes cognitively significant.

3.2.3 Comparison of Meaning Ranges

A cursory examination of the foregoing schematic networks reveals that each of the three prepositions has its own meaning range. How do these meaning ranges interact? Could a specific sense of one preposition be expressed by the other? I will examine the materials at hand by adopting minimal pair analysis method that consists in comparing sentences containing one preposition with the same sentences containing the other two. The aim of this analytical approach is two-fold: to delimit the range of possible uses of each preposition and to identify their roles in the system of the semantic field, by examining whether they are compatible with the same sentence. This method of analysis has proved to be fruitful in prepositional semantics because it can limit the field of application of a preposition by identifying the contexts in which it is used and from which other prepositions are excluded. Prototypical senses are not included since it has been done in 3.2.1.

ABOVE:

Sense: LM is a certain measurement criterion. TR is higher than LM.

(67) a. The peak of Mount Everest is many meters above sea level.
b. * The peak of Mount Everest is many meters on sea level.
c. ? The peak of Mount Everest is many meters over sea level.

(67)b is impossible because the distance between the mount and sea level is so great that it conflicts with the contact attribute of ON. (67)c is semantically possible, but seldom appears in daily language use.

Sense: TR is to the north of LM.

(68) a. The expedition traveled above the Arctic Circle.
b. The expedition traveled on the Arctic Circle.
c. The expedition traveled over the Arctic Circle.

(68)b and (68)c express different meanings from (68)a which means that the traveling took place to the north of the Circle. For (68)b, the traveling was approximate to and along the Circle; while for (68)c the traveling traversed the Arctic Regions.

Sense: TR is the information that precedes LM in written statements.

(69) a. I've read all of the books on the list above War and Peace.

b. I've read all of the books on the list on War and Peace.

c. * I've read all of the books on the list over War and Peace.

(69)a means that the names of the books appear before War and Peace. (69)b expresses a meaning in the abstract domain; the books are those whose content is about War and Peace. It is hard for me to figure out the meaning of (69)c.

ON:

Sense: TR is not in the vertically higher position of LM, but still supported by LM.

a) TR is fastened to LM.

(70) a. The picture on the wall hung too low.

b. The picture above the wall hung too low.

c. The picture over the wall hung too low.

(70)b and (70)c are close to each other in meaning; the trajector in each sentence is hanging somewhere higher than the top of the wall. This meaning is far different from that expressed by (70)a which means that the picture is hung on the surface of the wall.

b) LM is a body part; TR is something people wearing or carrying.

(71) a. The gloves were on my hands.

b. The gloves were above my hands.

c. The gloves were over my hands.

(71)a means that my hands were in the gloves and covered by them. But for (71)b and (71)c, the gloves seemed to be hung somewhere higher than my hands and did not touch them.

Sense: TR is perceived as adherent to LM.

(72) a. There were water stains on the floor.

b. * There were water stains above the floor.

c. * There were water stains over the floor.

(72)b and (72)c are semantically anomalous.

Sense: TR is perceived as a part of LM.

(73) a. the freckles on his face

b. * the freckles above his face

c. * the freckles over his face

Sense: LM is a geographical area. TR is within this region.

(74) a. She lives on the farm.

b. * She lives above the farm.

c. She lives over the farm.

(74)b is semantically impossible. (74)c differs from (74)a in the places where she lives, it is the farm in (74)a but the other side of the farm in (74)c..

Sense: LM is a projective region. TR is located in this region.

(75) a. The books belonging to the group are on the left.

b. * The books belonging to the group are above the left.

c. * The books belonging to the group are over the left.

Sense: TR is to the direction of LM.

(76) a. The cat jumped on the mouse.

b. * The cat jumped above the mouse.

c. The cat jumped over the mouse.

In (76)a, the mouse was the prey that the cat tried to catch; if the cat succeeded, the mouse would be trodden under its paws. (76)c means that the trajectory of the cat's jumping traces a path above the mouse.

Sense: LM is a large vehicle and TR is carried by it.

(77) a. The luggage is still on the plane.

b. ? The luggage is still above the plane.

c. ? The luggage is still over the plane.

Though situations for (77)b and (77)c are conceivable, they look very ridiculous and completely different from (77)a. (77)a means that the luggage is in the interior of the plane and carried by it, while (77)b and (77)c, if possible, imply that the luggage is outside the plane.

Sense: TR is contiguous to the edge of LM.

(78) a. a city on the ocean

b. a city above the ocean

c. a city over the ocean

(78)b and (78)c are well-formed, but their meanings are different from (78)a. (78)a means the city is near the ocean but its location is unspecified. (78)c means that the city lies on the opposite coast of the ocean; it denotes the end-point of a path which an observer would have to follow in order to arrive at the trajector. (78)b describes a situation where the city is in the sky over the ocean, not real but possible.

OVER:

Stative sense: TR is directly above LM.

(79) a. The sky is over our head.

b. * The sky is on our head.

c. The sky is above our head.

Stative sense: TR expands some distance above LM.

(80) a. The power line stretches over the yard.

b. * The power line stretches on the yard.

c. The power line stretches above the yard.

Covering sense: TR covers LM from sight.

(81) a. The cloth is over the table.

b. The cloth is on the table.

c. ? The cloth is above the table.

(81)b emphasizes the factor of support; besides covering the table by spreading over it as in (81)a, the cloth might also be folded or crumpled so that it does not hide the entire table surface from sight. (81)c is possible in very specific situations, say, the cloth is hung on a line over the table, but usually we do not say so.

Covering sense: TR covers LM in a perceptive way.

(82) a. The guards were posted all over the hill.

b. * The guards were posted all on the hill.

c. * The guards were posted all above the hill.

In the 16 pairs above, ABOVE and OVER are interchangeable in four contexts (70, 71, 79, 80, all express stative senses) without seriously changing the original meanings, and only one OVER can be substituted by ON (81). The minimal pair analysis of each sense reveals that OVER and ABOVE are semantically closer to each other than each of them to ON.

Chapter Four Conclusion

It is the intention of this thesis to analyze the polysemous English prepositions ABOVE, ON and OVER in the field of cognitive linguistics. The goal is to construct prototype schemata and top schemata for their spatial semantic content, and to answer the question how these prepositions interact in the semantic field defined by the up axis.

For this purpose, Langacker's schematic network model is adopted. The model is made up of three types of nodes: schema, prototype and extended instance. Schema and prototype are taken to be two aspects of a unified phenomena. A schema is prototypical to its extended instances, while a prototype is the local schema governing its lower-level prototypes and extended instances. Thus, the model side-steps the long existing controversy of whether category representations take the form of schema, prototype or actual example. Two types of intrinsic relations are included in the model, i.e. specialization and extension. Prototype and extended instances specialize their dominating schema by adding information, which overcomes the over-abstractness of schematic representations. Therefore, horizontal growth of a network by extension from prototypical schemata is inherently associated with its vertical growth of extractions of schemata. This seems more natural to accommodate lexical changes brought about by acquisition and grammaticalization. In such hierarchical networks, only the schemata at the basic level is cognitively real and salient.

Construction of schemata for ABOVE and ON begins with a search for prototypical senses through Experiment 1 which took the method of sentence generation task. Responded uses of each preposition are classified into a number of senses according to their semantic similarities. Since a sense is abstract and governs a number of specific uses, it is itself schematic. Frequency of classified senses are counted by percentage and the sense of the greatest frequency is considered to be the prototype. Other senses are compared with this prototype to find their similarities for building a dominating schema or schemata. The schema or schemata arrived at can be elaborated into rich images by specific contexts through valence relations. ABOVE and ON are studied in this way, while the search for the prototype of OVER is mainly based on Lakoff's case study.

The analyses show that each of the three prepositions has its own schematic

network. The top schema for ABOVE is that TR is higher than LM along the up axis with no contact between the entities. Since the up axis is not necessarily vertical, prototypical schema for ABOVE is that TR is vertically higher than LM without contact. As for ON, the highest schema is that LM supports TR. "Support" is a naive concept. By supporting, weight of an object presses or pulls upon another and the supporting object then resists the push or pull. The prototypical schema for ON is the sense that TR is contiguous to LM and supported by it. OVER is semantically more complex than ABOVE and ON. It has three sub-schemata: motion sense, stative sense and covering sense. Motion sense is the prototypical schema, in which TR traces a path vertical to LM. Stative sense refers to the situations where TR is vertically higher than LM without contact. Covering sense means that TR covers LM. The covering sense exists both in motion uses and stative uses.

The contrastive study of the three prepositions gives us a deeper insight into their meanings by their semantic differences. The prepositions are compared from three angles: prototypes, stative senses and meaning ranges. As for prototypes, ON takes "contact" as a prerequisite; ABOVE necessitates "non-contact" between TR and LM; though OVER contains non-contact in its schema, this can be altered by context. The second angle of comparisons concerns the stative or dynamic nature of the prepositions. ABOVE and ON are primarily stative in nature, while OVER covers a wider semantic area than stative relations. Therefore, the three are more comparable in stative senses. With regard to vertical distance between TR and LM, these prepositions can be ranked as ON < OVER < ABOVE from approximation to a long distance. With regard to horizontal distance, horizontal projections of TR and LM that are related by ON or OVER generally coincide; for ABOVE, they might diverge but not to the extent where horizontal distance becomes cognitively significant. The third angle of comparison is concerned with meaning ranges. Minimal pair analysis method is exploited. The analytical results show that OVER and ABOVE are semantically closer to each other than each of them to ON.

Therefore, the space higher than a landmark seems to be divided into several subparts in the conceptual system, and each subpart is corresponded to a certain sense of a certain preposition. It is at least the case with English speakers. Our conceptual system does not reflect the reality like a mirror, but has its own regulations. When one perceives a scene of up-axis related entities, he forms a plan for his communication. If his goal is

to locate the higher entity, his choice is among ABOVE, ON and OVER according to the properties of relevant entities, both geographical and functional, and the constraints of each preposition. He can adjust a scene that he has never experienced to fitting into his conceptual system and find appropriate words to match it. The major reason for this ability is the fuzzy boundaries between concepts. One tenet of prototype theory is that concepts, and therefore word meanings, do not have clear boundaries (Lehrer, 1990: 369). The three prepositions in this study are no exceptions. Consider the vertical distance between TR and LM firstly. The distinctions between the prepositions seem to be very clear in the analysis of 3.2.2.1, but can you draw a clear demarcation between the area approximate to a landmark and the area that is of a short distance to it, short enough for the trajector to exert an influence on the landmark? Or can you fix a height of a certain distance from a landmark where ABOVE should be the right one while OVER is not? The answers are no. Meanings of the prepositions are fuzzy at boundaries, sometimes even overlapping since one can be substituted by another in some contexts. Fuzzy boundaries between word meanings come from the abstractness of concepts. Prototypes and schemata have a built-in attribute of abstractness. This abstract attribute allows languages to describe novel thing by adding information through devices of modification. For example, if I want to tell someone about a picture above the mantel, I can describe it as *three feet above the mantel and one feet to the left of it*. Under normal circumstances, this sort of precision is unnecessary, sometimes even clumsy and tedious. The conventional strategy is to do with the words at hand by using the conventional lexicon. So, our expressions involve degrees of explicitness.

Vocabularies of natural languages are very large, but they still are finite. The finite attribute of prepositions is more prominent than other word classes. The spatial prepositions in English, excluding compounds such as *right next to*, form a relatively small closed class numbering somewhere above eighty (Landau, 1986). However, the number of things, events, situations, processes that could be described is finite. Abstractness of concepts, fuzzy boundaries between concepts and language devices of modification operate together to explain such lexical economy.

Although the analyses of *above, on* and *over* have enabled me to shed light on some issues concerning prepositional semantics, there are still many aspects that remain unsolved and need to be analyzed in detail. Firstly, only prototype schemata and top schemata have been constructed for the prepositional networks. Such simplified

networks are not claimed to be the exact values characterizing a speaker's knowledge of a lexeme. For future research, I suppose, studying the acquisition of prepositional usage by very young children could reveal detailed information about structures of lexical networks. Secondly, experiments can be more refined with regard to methods, questionnaire designing and selection of subjects.

Bibliography

[1] Brugman, Claudia. 1981. Story of OVER. MA thesis, University of California, Berkely.

[2] Cruse, D. A. 1990. Prototype theory and lexical semantics. In *Meaning and Prototypes*, ed. Savas Tsohatsidis , 382-402. London/New York: Routledge.

[3] Dalgish, Gerard M. 1997. *Random House Webster's Dictionary of American English.* 北京: 外语教学与研究出版社.

[4] Dirven, Rene and Gunter, Padden. 1996. *Cognitive English Grammar*. Durisberg: Linguistic Agency University of Durisberg.

[5] Dirven, Rene and Verspoor, Marjolijin. 1998. *Cognitive Explanation of Language and Linguistics.* Amsterdam: John Benjamins.

[6] Ekberg, Lena. 1997. The Mental Manipulation of the Vertical Axis: How to go from "up" to "out", or from "above" to "behind". In *Lexical and Syntactical Constructions and the Construction of Meaning*, ed. Marjolijin Verspoor, Kee Dong Lee and Eve Sweetser. Amsterdam: John Benjamings.

[7] Fillmore, Charles J. 1968. The Case for Case. In *Universals in Linguistic Theory*, ed. E. Bach and R. T. Harms, 1-88. London: Holt, Rinehart & Winston.

[8] Fillmore, Charles J. 1969. Towards a Modern Theory of Case. In *Modern Studies in English*, ed. D. A. Reibel and S. A. Schane, 361-375. London: Prentice Hall Inc.

[9] Harris, Z. S. 1951. *Structural Linguistics*. Chicago: The University of Chicago Press.

[10] Herskovits, Anntte. 1986. *Language and Spatial Cognition: An Interdisciplinary Study of the Prepositions in English.* Cambridge: Cambridge University Press.

[11] Hilferty, Joseph. 1999. *Through* as a means to metaphor. In *Issues in Cognitive Linguistics*, ed. Leon de Stadler and Christoph Eyrich, 347-365. Berlin: Mouton de Gruyter.

[12] Johnson, Mark. 1987. *The Body in the Mind: the Bodily Basis of Meaning, Imagination, and Reason.* Chicago: The University of Chicago Press.

[13] Labove, W. 1973. The boundaries of words and their meanings. In *New Ways of Analyzing Variation in English*, ed. Bailey, C. N and Shuy, R. W., 340-373. Washington: Georgetown University press.

[14] Lakoff, George. 1987. *Women, Fire and Dangerous Things: What Categories*

Reveal about the Mind. Chicago: The University of Chicago Press.

[15] Lakoff, George and Johnson, Mark. 1980. *Metaphors We Live By.* Chicago: The University of Chicago Press.

[16] Landau, Barbara. 1996. Multiple Geometric Representations of Objects in Languages and Language Learners. In *Language and Space*, ed. Paul Bloom, Mary Peterson, Lynn Nadel. Cambridge, MA: The MIT Press.

[17] Langacker, Ronald. 1987. *Foundations of Cognitive Grammar, vol.* 1: *Theoretical Prerequisites.* Stanford, CA: Stanford University Press.

[18] Langacker, Ronald. 1988. A Review of *Women, fire and Dangerous Things: What categories reveal about the mind. Language* 64: 384-394.

[19] Langacker, Ronald. 1990. *Concept, Image, and Symbol: The Cognitive Basis of Grammar.* Berlin: Mouton de Gruyter.

[20] Langacker , Ronald. 1993. Reference-point constructions. *Cognitive Linguistics* 4: 1-48.

[21] Lassadi, Boutheina. 2000. Towards a Semantic Description of the Preposition *At:* a Cognitive Approach. MA thesis. Canada: Universite Laval.

[22] Lehrer, Adrienne. 1990. Prototype theory and its implications for lexical analysis. In *Meaning and Prototypes,* ed. Savas Tsohatsidis, 368-381. London/New York: Routledge.

[23] Mattews, P. H. 2000. *Oxford Concise Dictionary of Linguistics.* 上海: 上海外语教育出版社.

[24] Quirk, R. 1968. *The Use of English.* London: Longman Group Ltd.

[25] Ravin, Yael and Leacock, Claudia. 2000. Polysemy: An Overview. In *Polysemy: Theoretical and Computational Approaches*, ed. Yael Ravin and Claudia Leacock, 1-29. Oxford: Oxford University Press.

[26] Rauh, Gisa. 1991. Prepositional forms in the lexicon: problems and suggestions. In *Approaches to Prepositions*, ed. Gisa Rauh, 169-223. Tubingen: Gunter Narr Verlag.

[27] Rice, Sally. 1991. Aspects of prepositions and prepositional aspect. In *Approaches to Prepositions*, ed. Gisa Rauh, 225-247. Tubingen: Gunter Narr Verlag.

[28] Rice, Sally. 1996. Prepositional Prototype. In *The Construal of Space in Language and Thought*, ed. Martin Putz and Rene Dirven, 135-165. Berling: Mouton de Gruyter.

[29] Rosch, Eleanor. 1973. Natural categories. *Cognitive Psychology* 4:328-350.

[30] Rosch, Eleanor. 1975. Cognitive reference points. *Cognitive Psychology*7:532-547.

[31] Rosch, Eleanor. 1976. Structural bases of typicality effects. *Journal of Experimental Psychology: Human Perception and Performance* 2:491-502.

[32] Rosch, Eleanor. 1978. Principle of categorization. In *Cognition and Categorization*, ed. Eleanor Roach. Hillsdale: Lawrence Erbaum, 1978.

[33] Shepard, R. N. and Hurwitz, S. 1985. Upward direction, mental rotation, and discrimination of left and right turns in maps. In *Visual Cognition*, ed. Pinker, S. London: The MIT Press.

[34] Svorou, Soteria. 1993. *The Grammar of Space.* Amsterdam: John Benjamings.

[35] Talmy, Leonard. 2000. How Language Structure Space. In *Toward a Cognitive Semantics*, *Vol.* 1: *Concept Structuring Systems*, ed. Leonard Talmy, 177-254. London: The MIT Press.

[36] Taylor, John R. 1989. *Linguistic Categorization: Prototypes in Linguistic Theory.* Oxford: Clarendon Press.

[37] Taylor, John R. 1990. Schemas, prototypes, and models: in search of the unity of the sign. In *Meaning and Prototypes*, ed. Savas Tsohatsidis, 521-534. London/New York: Routledge.

[38] Taylor, Holly. 2000. A view of space through language. In *Cognitive Mapping: Past, Present & Future,* ed. Rob Kitch and Scott Frundschun, 179-196. London/New York: Routledge.

[39] Vandeloise, Claude. 1990. Representation, prototypes, and centrality. In *Meaning and Prototypes*, ed. Savas Tsohatsidis, 403-436. London/New York: Routledge.

[40] Vandeloise, Claude. 1991. *Spatial Prepositions: A Case Study from French.* Trans. By Anna R. Bosch. Chicago: The University of Chicago Press.

[41] Watson, Owen. 1976. *Longman Modern English Dictionary.* London: Longman Group Limited.

[42] Wege, Barbara. 1991. On the lexical meaning of prepositions: a study of *above*, *below and over.* In *Approaches to Prepositions*, ed. Gisa Rauh, 275-296. Tubingen: Gunter Narr Verlag.

[43] 张道真, 实用英语语法. 北京: 商务印书馆, 1981.

[44] 张振邦, 新编英语语法. 上海: 上海译文出版社, 1981.

[45] 王逢鑫, 英语意念语法. 北京: 北京大学出版社, 1996.

QUESTIONNAIRE A

1. Please generate 10 sentences containing the preposition "above" within about ten minutes.

The bird is flying in circles above the house.
The shelf was put above the picture.
The ceiling above us was painted white
The sun above our heads was turning slowly.
The luggage was in a bin above our heads.
The trees above us were a beautiful green.
The knowledge of the teacher was above that of the students
The plane flew above the clouds for most of the trip
We put the wood above the paper before starting the fire.
The water was above the safe level.

2. Please generate 10 sentences containing the preposition "on" within about ten minutes:

The dew was on the grass in the morning.
My husband was sitting on a rock.
The flowers are blooming on the plant
There are many words on the page
I sat on the seat in the car
The baby sat on my knee
I listened to the program on the radio
He rides his bicycle on the street.
We hope that he will be on time
The lamp is on the table.

3. Please describe the differences existing between the meanings of "above," "on" and "over":

"Above" would denote being in a higher plane than something else, whereas one meaning of "on" would be to be above and touching what is beneath it

"Over" is similar to "above" but may imply motion (flying over or across), or could be upon the surface of something. There is also the understanding of being above in authority or superiority

QUESTIONNAIRE A

1. Please generate 10 sentences containing the preposition "above" within about ten minutes.

The picture of the girl was above the picture of the boy.
His grade was above 80%.
There was a light above the door.
The body of the letter was above his signature.
His behaviour was above reproach.
The books were stacked one above the other.
On a map, Canada is above the USA.
Above all, we should be honest.
Most airplanes fly above the clouds until they reach their destination.
He has a picture of his wife above his desk.

2. Please generate 10 sentences containing the preposition "on" within about ten minutes:

The teapot was on the table.
He had a hat on his head.
What on earth is happening?
The hen was sitting on her eggs in the nest.
It is so cool that I think I will put on a sweater.
He could see the airplane on the horizon.
He turned his radio on to listen to the news.
I like to keep my clock on the table by my bed.
On the way to work he stopped to watch a fire.
The car had a scratch on its fender.

3. Please describe the differences existing between the meanings of "above," "on" and "over":

A bird flying above a house is higher than the house but remains near the house.
A bird flying over a house flies above it and moves past it.
A bird on the house is above the house and also is in contact with it.
These words have many other meanings as the sentences show.

QUESTIONNAIRE A

1. Please generate 10 sentences containing the preposition "above" within about ten minutes:

The eagle soared above the valley.
The helicopter hovered above the accident site.
The moon was visible above the mountain.
There was blue sky above and green grass below.
An ornate light fixture hung above the dining room table
Their son and his wife lived in the apartment above them.
The dryer was above the washer.
The flowers were placed on the mantle above the fireplace.
The fireworks were visible above the trees.
The arrow struck the tree above his head.

2. Please generate 10 sentences containing the preposition "on" within about ten minutes:

The eagle perched on the tree top.
The helicopter landed on the road beside the wrecked car.
The moon appeared large on the horizon
There is a lot of snow on the roof
The book is on the table
The ball is on the floor
The candle is on the shelf
The football team is on the field.
The plane landed on the runway
The bananas are on the produce shelf beside the apples.

3. Please describe the differences existing between the meanings of "above", "on" and "over":

On suggests that an object is above something and in contact with it.
Above suggests that something is higher than something else, less likely to be in contact with it.
Being on an object suggests that it is being held up by the object.
Over is frequently used for something that is above something else and moving or extending for some distance.

e.m.

QUESTIONNAIRE A

1. Please generate 10 sentences containing the preposition "above".

The hawk flies above the wood pile.
The mountain is 7,000 feet above the sea.
Do you live in the apartment above me?
When flying we must get above the clouds.
Let us put above all things a time to sing.
The mountain towers above the plain.
The woodpile is above water level.
Will the temperatures rise above 0° today?
Could we have the light above us adjusted?
What's in the box above the mantle?

2. Please generate 10 sentences containing the preposition "on".

The boards were piled one on another.
He sat on the ridge watching the sunset.
We will work on the lesson together.
She tried on a new dress
I don't feel like working on my holiday.
In the box on the shelf is my book.
We drive on the right side.
The completed sentence on the black board is correct.
We always seem to have tests on Saturdays.
He likes to talk on the telephone.

3. Please describe the differences existing between the meanings of "above", "on" and "over".

above can be substituted for on or over.
on is in contact
above may not touch
over is an extension of or motion across

QUESTIONNAIRE A

1. Please generate 10 sentences containing the preposition "above" within about ten minutes.

The moon rose above the eastern horizon.
Several Canada geese flew above the clouds.
The task was above his ability to complete in ten minutes.
Above the mantle of the fireplace hung a photograph of his father.
The temperature of steam rises above the boiling point of water.
Above the post office flew the flag of Canada.
Alberta lies above the forty-ninth parallel of latitude.
For several days the temperature remained above normal.
The preceding sentences are sometimes referred to as the above sentences.
These sentences were written on the above date.

2. Please generate 10 sentences containing the preposition "on" within about ten minutes:

The cup sat on the table.
On the first day of Christmas, my true love gave to me ——
The northern boundary of Alberta lies on the sixtieth parallel of latitude.
The student wrote the note on a piece of paper.
He placed the cup on to the table.
The book lay on the shelf.
please turn on the light.
An eagle perched on top of a tall tree.
Several people waited for a bus to arrive on time.
When a person is driving on the road, it is best to read the traffic signs.

3. Please describe the differences existing between the meanings of "above", "on" and "over":

I think of "over" as having a more ~~act~~ active meaning than "above." For example, the dog ~~jum~~ jumped "over" the fence.

"Over" to me implies the idea of physical motion. For example, we walked over the bridge; that is a displacement of an~~d~~ object through space and time.

"Above" and "on" are more static ~~in~~ or stationary in nature. For example, the chandelier hung above the table while the candle rested on the table below.

QUESTIONNAIRE A

1. Please generate 10 sentences containing the preposition "above" within about ten minutes.

RED DEER IS 2700 FEET ABOVE SEA LEVEL
THE ARCTIC REGION OF CANADA LIES ABOVE THE TREE LINE
THE BIRDS WERE PERCHED ABOVE THE NESTING SITE
HIS ACTIONS WERE ABOVE THE CALL OF DUTY
THE PICTURES WERE PLACED ONE ABOVE THE OTHER ON THE WALL
THE CUPBOARDS WERE SITUATED ABOVE THE TABLE
THE AIRPLANE FLEW HIGH ABOVE MOUNTAINS
THE HILLS ARE HIGH ABOVE VALLEY.
THE PLANTS WERE PLACED ONE STEP ABOVE THE OTHER.
THE HABITAT OF MOUNTAIN GOATS IS ABOVE THE TREE LINE ON THE MOUNTAINS

2. Please generate 10 sentences containing the preposition "on" within about ten minutes:

MANY PEOPLE WALK ON THE TRAILS IN THE WOODS
BICYLES CAN BE RIDDEN ON SOME STREETS IN RED DEER
THE FIRST DAY OF APRIL FALLS ON A MONDAY
THE DISHES ARE ON THE TABLE.
THE TALL LAMPS ARE ON THE FLOOR
ALBERTA IS ON MOUNTAIN STANDARD TIME FROM OCTOBER TO APRIL
THE BIRD FEEDERS ARE HANGING ON THE TREES
THERE ARE MANY HOUSES ON MCKINNON DR
THE FLOWERS ARE IN A VASE ON THE TABLE
WE ARE ON TIME FOR THE MOVIE.

3. Please describe the differences existing between the meanings of "above", "on" and "over":

Age 46

QUESTIONNAIRE A

1. Please generate 10 sentences containing the preposition "above" within about ten minutes:

1 The space above the kitchen cupboard was too small for the box.
2 There are many satellites orbiting above the earth.
3 The mountains towered above them as they began their climb.
4 The people watched the sky above them.
5 The book was on the shelf above the stove.
6 Above her head the spider wove its web.
7 carry-on luggage goes in the compartment above the passengers.
8 The bells rang in the tower above the church.
9 There is noone above the owner of the company.
10 The sky above was filled with twinkling stars.

2. Please generate 10 sentences containing the preposition "on" within about ten minutes:

1 On the roof is no place for me.
2 The dishes were on the table.
3 The ribbon on the present was too pretty to throw away.
4 There were no extra chairs on the stage.
5 On the shelf were many books
6 There were fleas on the dog.
7 The cat pounced on the mouse.
8 There were water stains on the floor.
9 The rug didn't hide the marks on the floor.
10 The picture on the wall hung too low.

3. Please describe the differences existing between the meanings of "above", "on" and "over":

"On" is usually referring to a position or place that touches another thing.

"Above" referres to a position or place being higher than another thing and there is usually no motion implied.

"Over" refers to a position or place higher than another thing and motion is usually implied.

"Over" can also ~~refer~~ be a quantitative reference.

Age-13

QUESTIONNAIRE A

1. Please generate 10 sentences containing the preposition "above" within about ten minutes:

1. I [illegible] above the ground.
2. The stars twinkled above the man's head.
3. The light was hanging above his head.
4. The bridge was above the river.
5. The Bird glided above the sea.
6. The wing was above the man's head.
7. The cookie jar was above the boy's reach.
8. The clouds were above the earth.
9. The ~~tree~~ frisbee soared above the boys head.
10. The ball was thrown above his head.

2. Please generate 10 sentences containing the preposition "on" within about ten minutes:

1. The grass grew on the ground.
2. I wear glasses on my ~~face~~ face.
3. The cat sat on the chair.
4. There is a hat on my head.
5. The cup was on the table.
6. The man got on the train.
7. The food sat on the table.
8. ~~The~~ There was snow on the car.
9. The magnet was on the fridge.
10. The chair stood on the floor.

3. Please describe the differences existing between the meanings of "above", "on" and "over":

"Above" means that an object is up higher than the object below it and is not touching it.

"On" means that the object is touching the object below it.

"Over" means to pass above an object that is below you.

age - 16

QUESTIONNAIRE A

1. Please generate 10 sentences containing the preposition "above" within about ten minutes:

I stood above the sand.
The plane flew above the airport.
There was a bridge above the water.
The duck flew above the pond.
Peter looked at the hook above his head.
Above me was a red bird.
Above the barn flew a jet.
The stars shone above the Earth.
A coat hanged above the floor
The flying saucer hovered above the ocean.

2. Please generate 10 sentences containing the preposition "on" within about ten minutes:

The hat was on my head.
The cat sat on the chair.
The horse was on the road.
I felt the socks on my feet.
There was snow on the roof.
A cat was on the cement.
Twelve turkeys stood on the dock.
A man walked on the sidewalk.
The car was on the road
The gloves were on my hand.

3. Please describe the differences existing between the meanings of "above", "on" and "over":

"Above" means that an object or objects is higher than another object.

"On" means that one or more objects is directly touching another.

"Over" means that one object that you are referring to is higher than another object.

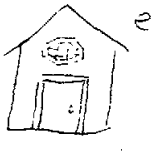
QUESTIONNAIRE A

1. Please generate 10 sentences containing the preposition "above" within about ten minutes:
   1. The bird flying above the housetops.
   2. Please look for the book ~~above my desk~~ on the shelf above my desk.
   3. The picture above your fireplace is lovely.
   4. The window above the door is octagonal.
   5. The Canadian flag should be above the Alberta flag on the flagpole.
   6. She went above and beyond the call of duty.
   7. I look up there, above the garage!
   8. You should aim to achieve a score above your current average.
   9. The top bunkbed is above the lower bunkbed.
   10. Please place the red sticker above the green sticker on the chart.

2. Please generate 10 sentences containing the preposition "on" within about ten minutes:
   1. The kettle is on the stove
   2. The book is on the sofa.
   3. Stop sitting on that chair.
   4. Do you realize you are standing on the same spot she was?
   5. Dinner is on the table
   6. The bird is sitting on the roof.
   7. The blankets are on the bed
   8. The sticker is on the chart.
   9. The lamp is on the ~~mantelpiece~~ mantelpiece
   10. There is ice on the road

3. Please describe the differences existing between the meanings of "above", "on"" and "over":

We use "on" when we are speaking of something on top of something else but touching it or resting on it e.g.  The bowl is on the table

We use above to describe the direction of something in relation to something else  e.g. The window is above the door.

I think that "over" can often be used interchangeably with above however I think it may be used more often with things that are moving e.g. The birds were flying swiftly over ~~head~~ the valley.

QUESTIONNAIRE A

1. Please generate 10 sentences containing the preposition "above" within about ten minutes.

That message was above my head.
The birds flew above the trees.
The water was above my knees.
There was a picture above the shelf.
Above the window was a short curtain.
She raised her arms above her head.
She was above average in her class.
The cookbooks were on a shelf above the kitchen counter.
Satellites fly far above the earth.
The peak of Mount Everest is many metres above sea level.

2. Please generate 10 sentences containing the preposition "on" within about ten minutes:

The TV was on.
The book was on the table.
She walked on the right side of the road.
She drew a picture on white paper.
She hung her purse on the hook.
She put the clock on the shelf.
She took her shoes off and placed them on the mat.
She sat down and put her feet on the footstool.
Our computer sits on an oak desk.
She put the vegetables on the stove to cook.

3. Please describe the differences existing between the meanings of "above," "on" and "over":

"Above" means "higher than" or "greater than".
"On" usually means "above and touching, supported by or attached to".
"Over " has many meanings but,, most commonly, it expesses a movement or position above or beyond something.

QUESTIONNAIRE A

1. Please generate 10 sentences containing the preposition "above" within about ten minutes:

The birds fly above the treetops.
Above the supervisor, was the corner.
There is an apartment directly above ours.
He was swimming with his head above the water.
There were six shelves, one above the other.
The expedition travelled above the arctic circle.

2. Please generate 10 sentences containing the preposition "on" within about ten minutes:

The picture is hung on the wall.
The books are on the shelves.
The clothes are hanging on the line
The hand above the accident on the news.
I rest my head on the pillow.

3. Please describe the differences existing between the meanings of "above", "on"" and "over":

on - signifies contact with
over - not touching, but relatively close to
above - comparatively more distant than 'over'
- order of rank or position in relation to other things.

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QUESTIONNAIRE A

1. Please generate 10 sentences containing the preposition "above" within about ten minutes:

1 The shelf was above the stove
2. "I am above the roof"
3 James fell onto the cupboard above the wash basin.
4. The tin was above the shelf.
5 The apple was above Amy's reach.
6 Emily leaped above the mess.
7 "I was sitting on the rafters above the sitting room when I heard a strange noise.
8 "Break the eggs above the bowl"
9 Look out! He's right above you!"
10. The cakes were above [redacted] the counter.

2. Please generate 10 sentences containing the preposition "on" within about ten minutes:

1. The boy is on the boat
2. He was on the stairs when he heard a noise
3. She listened to a noise on the roof
4. She fell on the floor
5. She jumped on the bed.
6. He saw the mess on the floor
7. She ran until she was on the green grass.
8. The apples are on the counter.
9. My dress is on my bed.
10. My hair is on my head.

3. Please describe the differences existing between the meanings of "above", "on"" and "over":

We use the word on" for describing something sitting on or stationed on something else. For example:

the door is on the house
the flag is on the house

I think of the words "above" and over as meaning the same thing I do however believe "above" is more for explaining something sitting, rather than something instantaneously in the air.

QUESTIONNAIRE A

1. Please generate 10 sentences containing the preposition "above" within about ten minutes:

He saw a quiet bird above them.
They were above the others in rank.
In a totem pole, the eagle is placed above the bear.
The heavens are high above the earth.
The climber hung precariously above the canyon.
The eagle soars above the clouds.
I looked at the shelf above my head.
The light is above the table.
The blocks were stacked one above the other.

2. Please generate 10 sentences containing the preposition "on" within about ten minutes:

The ~~[illegible]~~ children jumped on the screen.
My coffee cup is resting on the table.
He works on the paper.
They started on their journey.
On their way, they saw the Rocky Mountains.
They were meeting on the hilltop.
We have piano lessons on Wednesdays.
He was slain on the seventh of March.
The animals were kept on the farm.

3. Please describe the differences existing between the meanings of "above", "on"" and "over":

QUESTIONNAIRE

1. Please generate 5 sentences containing the preposition "above" within about 5 minutes:

   Above all, she was determined to maintain her integrity.

   The bird sat above them on the wire.

   The concept was above me.

   Her grades were above mine.

   Her work was above and beyond the teacher's expectations.

2. Please generate 5 sentences containing the preposition "on" within about 5 minutes:

   The tee shirt was on the back of the couch.

   The plane was on time.

   On top of it all, she had to prepare for a seminar.

   I haven't put my shoes on yet.

   It was plain to see that it was time she moved on.

3. Please describe the differences existing between the meanings of "above", "on" and "over".

Above generally expresses a spatial relation where one thing is vertically higher than the other, but not making contact; or, it describes a degree -something beyond or greater than expectation or "out of reach."

On suggests that two items are in contact, and may describe the position of one relative to the other; or it suggests moving forward in space or time (or concept, such as "life").

Over may mean a spatial relation (like "above" or next to), indicate that one item is covering another in some fashion. It also modifies a general location away from or toward the immediate space. It may also indicate that something is over or complete.

Questionnaire

1. Please generate 5 sentences containing the preposition "above" within about 5 minutes:

Clouds float above the earth.

Look on the 3rd shelf. No, above that (i.e. where the person was looking).

Dr. Braden is the supervisor above mine (i.e. above my supervisor).

I put it above the sink.

The hovercraft hovered above the lake.

2. Please generate 5 sentences containing the preposition "on" within about 5 minutes:

The cat is on the mat.

I turned the light on.

Seat the guest of honor on the right of the hostess.

Look, Katarina Witt is on TV.

The seminar focuses on library education.

The class was going on to the next field trip stop.

3. Please describe the differences existing between the meanings of "above", "on" and "over".

Above - to not be placed directly touching whatever is below it.

On - Various meanings. For your purposes, to be directly touching something below it; To be in the electric power (instead of no electric power) position; To designate the location or topic of something.

Over - Can be used to indicate that something has been completed. "I'm glad the exam is over." Or to indicate location "Look over there." Over seems to be used differently than above--i.e. cars go over a bridge, not above it. Over implies that there is contact between two objects, much like "on". However, "on" does not imply motion.

QUESTIONNAIRE

1. Please generate 5 sentences containing the preposition "above" within about 5 minutes:

The books are above the desk.

Above all, don't ever get dehydrated while hiking.

Martin Luther King Jr. helped all people begin to rise above prejudices.

The airplane flew above the clouds during the thunder storm, so we could see the lightening flashing below us.

My grandfather keeps a horseshoe above the door to the barn for good luck.

2. Please generate 5 sentences containing the preposition "on" within about 5 minutes:

You should always be on time for an interview.

Your resume should have your contact information on it.

The books belonging to the group are on the right, my personal books are on the left.

Sign on the dotted line.

The pencil is on the paper. The paper has writing on it. The writings are on the topic of XML parsing.

3. Please describe the differences existing between the meanings of "above", "on" and "over".

Above : the impression I get for above is more of a complete separation between the item and the object it is above - almost a sense of physical distance even when we say that a person is "above" the emotion of jealousy (implying that their character is not concerned with such petty things as jealousy). Many things hang above other things (for instance, the light hangs above the table). The lamp is not touching the table nor dependent upon it. I would tend to think that above indicates a separation from, in addition to a placement higher than another object.

On : On implies contact. The book is on the table - if the table were not there, the book would fall. With something like "the lecture was on AIDS in Latin America" it implies that the lecture and the topic were so dependent upon each other that they are one and the same. Kinda like saying "I am short."

Over : For some reason, over implies movement to me: a plane flies over a city. The plane is moving. But then people also say things like "the picture over the mantelpiece." They might also use the word above in the same setting, but above may imply more distance than over. OK, I'm going to say that Over is somewhere between On and Above in distance. This is just an impression I have at the current moment. So a relatively small distance and movement are implied with over.

QUESTIONNAIRE

1. Please generate 5 sentences containing the preposition "above" within about 5 minutes:

   The clock is above the fireplace.

   Please look above that stack of papers.

   I've read all of the books on that list above War and Peace.

   He is above me in the order of speakers.

   Please fill in the fields on your form that I have displayed above.

2. Please generate 5 sentences containing the preposition "on" within about 5 minutes:

   What is on TV?

   I like ketchup on my hamburgers.

   I have been on a diet for ten years.

   How do I turn on the VCR.

   I have never been on any drugs.

3. Please describe the differences existing between the meanings of "above", "on" and "over".

Above generally indicates placement in some sort of order whether it be physical or symbolic in nature.

On generally describes the physical location of something in relation to another object, it also can describe the active state of a device.

Over generally means the end of some sort of event, or can be used to declare the physical location of an item or a place.

QUESTIONNAIRE

1. Please generate 5 sentences containing the preposition "above" within about five minutes:

   What is this book above my comprehension.

   It is above the shelf.

   When someone turned on the fan, the lights above me blew out!

   It is not above the five page limitation.

   I believe that I am above being treated as a child.

2. Please generate 5 sentences containing the preposition "on" within about five minutes:

   The cat is on the mat!

   Can I turn the book on its side?

   There is nothing on the table.

   That man is placing a CD on top of the shelf.

   He is sitting on a chair.

3. Please describe the differences between the meanings of "above", "on" and "over".

"Above" means that two things (objects or even concepts) are not on an equal level. It typically means that something is physically placed at a higher elevation in relation to something else. "Above" tends to allow for distance to form between objects.

"On" typically means that an object resides directly above something else. "On" usually indicates that two objects are close in proximity to each other.

"Over" is very similar to "above" in that the relationship between two objects may not be close in proximity. In my own opinion, I believe that "on" shows the closest proximity between two objects, and both "above" and "over" are synonymous in meaning. They both provide an opportunity for distance to form between two objects.

QUESTIONNAIRE

1. Please generate 5 sentences containing the preposition "above" within about five minutes:

The kite was flying above my head.

A letter grade of B is generally considered to be above average.

The flock of birds flew above the dense layer of fog.

One apple was still hanging on the tree, just above my reach.

The soup cans were stacked on the grocery shelf just above the baked beans.

2. Please generate 5 sentences containing the preposition "on" within about five minutes:

Since she was on the phone, she was unable to answer the door.

My favorite snack is peanut butter on graham crackers.

I turned the radio on to listen to some music.

He stood on the porch and looked out at the street.

Since it was getting cold, I decided to put on a sweater.

3. Please describe the differences between the meanings of "above", "on" and "over".

"Above" generally means "more than," "superior to," or "higher than."? "On" and "over" can be used in many different ways, some of which are similar to the use of "above."? In general, it is sometimes possible to interchange the words "above" and "over" but less easy to do so with "on."? For example, in my first sample sentence, you could just as easily say, "The kite was flying over my head," but if you said, "The kite was flying on my head," the meaning would be entirely different.

QUESTIONNAIRE

1. Please generate 5 sentences containing the preposition "above" within about five minutes:

The sun is above the earth.

The nose is above the mouth.

The light is above the table.

The mountains are above the valley.

A captain is ranked above a private.

2. Please generate 5 sentences containing the preposition "on" within about five minutes:

The shoe is on my foot.

My hair is on my head.

The book is on the table.

The sheet is on the bed.

The bread is on the plate.

3. Please describe the differences between the meanings of "above", "on" and "over".

Above and over mean that an object is higher than another object, and on means that the objects are on the same level.

QUESTIONNAIRE

1. Please generate 5 sentences containing the preposition "above" within about five minutes:

   Her head is above the clouds.

   The second floor is located above the first floor.

   He performed above and beyond his duties.

   She seems to think she is above the law.

   My head is above the water; my body is below the water.

2. Please generate 5 sentences containing the preposition "above" within about five minutes:

   I fell down on my knees and prayed.

   The apple is on the table.

   The police are on the trail of the bad guy.

   You are on target.

   I turned on the stove.

3. Please describe the differences between the meanings of "above", "on" and "over".

The word "above" generally indicates that an object is floating or higher than another object or idea. "Above" can be considered synonymous with "over" in certain cases.

The word "on" can mean that an object is either touching another object physically or metaphorically.

QUESTIONNAIRE

1. Please generate 5 sentences containing the preposition "above" within about five minutes:

A scream was heard above the music.

This article is very difficult. Its ideas are above me.

Oregon is above California on the map of the United States.

This winter, the temperatures have been above average.

A captain is ranked above a private.

2. Please generate 5 sentences containing the preposition "above" within about five minutes:

The book is on the table.

My favorite TV show is on at 8pm.

A picture of my grandmother is hanging on the wall.

He knocked on the door.

I talked to my parents on the telephone.

3. Please describe the differences existing between the meanings of "above", "on" and "over".

"above" implies comparison of position.

"on" implies actually touching. "The book is ON the table" is different from "the book is ABOVE the table".

"over" implies movement as well as position. "the cow jumped OVER the moon". "I put the blanket OVER his head".

There are other implications to these prepositions, but this is a general explanation.