The Renaissance of Metaphorical Thinking and the Implications for Cognitive Models of Cultural Language Education

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Metaphors are based on analogical thinking in which the source of some object serves as a model for a new concept, experience, or thought. Recently, scholars have come to realize that analogical thinking serves as a dominant mode of cognition. However, much more has taken place in the renaissance of metaphorical thinking. The previous model of the representation in which meaning is contained within a sign has changed. Language is no longer seen as the concatenation of signs, but as the spatial arrangement of concepts. This is the fundamental difference between the first and second generation of the cognitive sciences. In verbal metaphors the arrangement of concepts is linear but in visual metaphors they are spatially arranged. The writing systems based on ideograms function as visual metaphors. They arrange cognitive space in a different way from linear language systems.

With the advent of postmodern models of language, it has become evident that traditional concepts of representation need to be revised. Meanings are imposed onto words and are negotiated through social discourse. Postmodern models argue that meanings are not contained in objects such as words, pictures, and other forms of representation but are imposed on them. These objects, they contend, serve to invoke the meanings of these forms in the mind. This approach to language is well established in communication research and differs from how language is viewed by linguists and language teachers. The implications of this new approach are that language teachers should not only teach forms, but concepts and experiences in their interaction with students. Culture is based on daily patterns of social interaction. These patterns, explicit and implicit, constitute culture from an ethnomethodological approach. Consequently, language education needs to be embedded in cultural experiences that are semantically organized around the linguistic domains of everyday life.

Introduction

There was a time in the history of western thought when the concept of metaphors took on a pejorative meaning, and this negative concept of tropes has lingered on until the present time. This situation arose over two millennia ago in ancient Greece when Plato headed his own Peripatetic school. One of his students was Aristotle, a brilliant scholar and the one designated to be the new master to replace Plato upon his retirement. One day, Plato decided to retire and named his nephew as the new head of the school. The Greek word for nephew is nepotos as the concept of nepotism arose from this moment in European history. When Aristotle heard of the news, he turned against Plato. Everything that Plato said and did became suspect in his eyes. One of the concepts that Aristotle openly attacked was Plato’s use of various figures of speech such as metaphor and metonymy. Plato often used these linguistic tools to create dialectics, dialogues about new systems of thought. Aristotle attacked this use of language and favored language that adhered to the status quo. What Aristotle advocated became known as rhetoric, the study of established patterns of speech. What is interesting about this reaction to Plato by Aristotle is that it became the model of thought for centuries of western philosophers and scientists. They all bemoaned the use of metaphor as inadequate speech (Gibbs, 1994).
The disparagement of metaphor is now a thing of the past. Recently, linguists have turned their energies into reinvestigating the use of tropes in language (Lakoff and Johnson, 1980; and Lakoff, 1987). Lakoff was aware of the changes taking place in the cognitive sciences and knew that the field was being reconceptualized. Not only were cognitive scientists interested in analogical reasoning, but they were also interested in how visual thinking was used to create schemas, frames, and scenarios in language. Gibbs (1994) demonstrated that the dichotomy between figurative and literal language could not be sustained. Many literal terms are metaphorical in nature. Later, cognitive scientists noted how analogical language is used to create mental spaces and metaphorical blends. Gilles Fauconnier (1994) created a model of mental spaces and demonstrated how categories are used to move from a source to a target space in the creation of metaphor. In arguing “The surgeon is a butcher” one chooses the \textit{butcher} as the source concept and uses it to create a target, the \textit{surgeon}. The metaphor is created in a blended space that uses short term memory, long term memory, and the structure of the radial networks associated with the items \textit{butcher} and \textit{surgeon}. He referred to his model as \textit{mental spaces}, the place where concepts and categories combine in working memory.

Recently, scholars working within the field of grammaticalization (Hopper and Traugott, 1993) have demonstrated that not only lexical metaphors dominate language, but also grammatical metaphors. They provide numerous examples of new grammatical constructions that have emerged through the metaphorical construction of linguistic patterns. What they demonstrate has been widely known in the field of historical linguistics. New grammatical categories are continuously created and re-created in language metaphorically. For example, in many language systems a new form of the future was created and modeled on verbs of motion.

Spatial Movement: John is going to town.
Metaphorical Movement: John is going to sleep.
John is going to laugh.
Temporal Movement: John is going to Spain tomorrow.

What this amounts to is the fact that metaphors play a significant role in linguistic creativity. In the aforementioned examples, one finds a metaphorical movement based on a change of state (from non-sleeping to sleeping state, from non-laughing to laughing state) and time (from the present state to a future state). This creative use of metaphor is the focus of this presentation. However, before delving into this topic, one needs to understand some of the trends and ideas that led up to this development. One needs to understand what the cognitive sciences are and why linguistics is a part of that new interdisciplinary thrust. One needs to investigate the concept of cognitive linguistics and its various explications in the form of cognitive grammar. Similarly, one needs to have some familiarity with the concept of grammaticalization and how metaphor plays a dominant role in this endeavor, and also one needs to know how the concept of categorization (the creation of grammatical categories) has been redefined in the light of

\footnote{To understand, for example, is a metaphorical expression of standing under an object to look at it and come to know it visually. To see is another metaphorical expression. Philosophers of language were in a quandary because most of their language was figurative. Their case for a logical grammar based on literal language could not be sustained.}
research by cognitive anthropologists and cultural psychologists on the nature of human categorization. In particular, at one time linguists believed that grammatical categories were innate and universal, i.e., they could be found in all languages. It is now known that such categories are created through the use of metaphor.

There are numerous implications for the new approach to language and one of the most interesting comes from translation theory. It was once believed, for example, that grammar had to do with the concatenation of symbols and translation had to do with finding symbolic equivalents across languages. It is now known that grammars organize ideas and concepts and translation has to do with concepts and not symbols. Hence, for the first time, linguists have a viable model of computer translation that adequately addresses semantic domains, cultural history, and grammaticalizations across cultures.

What are the Cognitive Sciences?

There are several deep questions that have plagued European scholarship. Many of these questions can be readily attributed to Plato, the noted Greek philosopher. They all have to do with the nature of knowledge. What is knowledge? Where does it come from? How is it represented in the mind? In essence, Plato was concerned with a theory of human knowledge. In the famous Hixon Symposium at California Institute of Technology in 1948, many of these same questions were addressed. However, in this academic event, the setting was different. This was not a meeting of Plato and his favorite students. It was not a meeting of philosophers. Instead, it was a meeting of noted international scholars from a wide range of disciplines that would eventually come to be known as the cognitive sciences (Gardner, 1987: 10-14). In lieu of referencing the noted analytical mind of Socrates, these scholars spoke a marvelous new machine called the computer. For example, John von Neumann, a mathematician, drew striking analogies between the computer and the human mind. Warren McCulloch, a neurophysiologist and mathematician, compared the brain with the computer and how they both processed information. Karl Lashley, a psychologist, argued strongly for a study of the mind and noted how the organization of language is most characteristic of all cerebral events. He demonstrated how many forms of expression could not be explained within the context of behaviorism because the rapid execution of those expressions does not leave time for feedback to occur. Such actions can and do occur because they emanate from within the organism as a plan. Just as computers make use of plans that are incorporated into the machine as software, so it can be argued that the human mind has plans in the form that are represented in the form of goals, and models. These mental structures function as software programs of the mind.

Why did the computer play such a significant role in the development of the cognitive sciences? The answer to this question is interesting because it provides significant insight into the nature of this new machine. What makes the computer so unique is that it is the first time in the history of mankind that a machine can be used for more than one purpose. In the past, a machine or implement was built with a special purpose in mind. Computers turn out to be general problem solvers. What gives it flexibility is its software structure that allows the same machine to do different tasks. What fascinated cognitive scientists was the ability of the computer to emulate the functions of the human mind. This emulation is known as artificial intelligence. Hence,
the computer became a way for scientists to model the human mind. All of the disciplines that are engaged in this quest of modeling the nature of the mind are known as the cognitive sciences. They include the disciplines of linguistics, anthropology, psychology, philosophy, neuroscience, and artificial intelligence\(^2\).

**What is Cognitive Linguistics?**

If programs exist in the mind and if they designate and articulate human behavior, then what are they? One of the earliest attempts to model this ability came from research on protocol statements by Schank and Abelson (1977). They argued that knowledge structures must be built into computer programs as part of an a priori data-base. These canonical set of events were called *scripts*. They used the concept of eating at a restaurant as a content area that could be readily scripted\(^3\). The vocabulary that can be associated with the restaurant can be designated. Restaurants have *menus*, *waiters*, *bus boys*, *utensils*, *serving ware*, *tables*, *chairs*, *cashiers*, and other related items. Furthermore, there are certain kinds of protocol statements or designated requests than can be effortlessly associated with restaurants. One asks for a menu, one orders a meal, one may ask for a dessert cart, and one asks for the check before going to the cashier to pay for the meal and exiting the culinary place of business. This structured framework of knowledge was significant because it enabled the computer to understand the context of the situation. This approach to creating background knowledge is known as *expert systems* and has met with great success in the realms of artificial intelligence (Minsky, 1985).

Marvin Minsky (1975) also worked on a top-down (deductive) approach to computer processing\(^4\). His contribution came from the creation of frames, expected structures of knowledge. In lieu of lexical domains and protocol statements, Minsky developed frames that modeled an event or location in the form of slots. Hence, in his attempt to create a robot that could navigate the parameters of a building, he built in the frame of a room and one of the slots in that construction was a *doorway*. What Minsky wanted to do was to create a robot that would recognize a doorway when it came upon it. He also wanted the robot to have prior knowledge of what constitutes a room. Hence, he created a system in which the recognition of a doorway by the robot would simultaneously activate the whole *room frame*. Minsky (1985) went on to argue for a theory of mind that is constituted by numerous mental agents which can handle different types of knowledge. He referred to this model as a *Society of Mind*.

What is significant about the work of these early cognitive scientists is that they argued for a deeper understanding of language in artificial intelligence programs. Schank

\(^2\) Notably absent from this gathering were the sociologists. Perhaps this was because they were more interested in using computers for statistical computation rather than for the simulation of societal types.

\(^3\) Scripts are particular types of schemas. Scripts are memory representations for frequently performed action sequences. These sequences are linked and hierarchical. Frames are constituted by slots which have default categories. Linguistic frames can be found at the sentential level; combinations of frames can be organized into discourse scripts, symbolic interaction recipes, and even literary plot structures. It should be noted that Schank and Abelson (1977) used scripts to represent both senses, frames and scripts.

\(^4\) Computer scientists refer to memory storage in terms of top-down and bottom-up approaches. There is another sense in which this term is used, viz., top-down is deductive (beginning from pre-programmed information) and bottom-up is inductive (ascertaining inferences from general statements). The second sense of top-down is being used here, viz. deductive memory set.
and Abelson (1977), for example, noted that scripts, protocols, and vocabularies were about how concepts and ideas are organized and codified in language. So they naturally asked not only about how computers code human behavior, but also asked about how similar codes in language are used to negotiate social reality. Minsky (1985) noted that in addition to using language to form frames, scripts, metaphors, and the society of mind, one needs to look at the mind as a parallel processor, one capable of handling several scripts simultaneously, a situation comparable to how human languages function within social contexts. Understandably, linguistics became one of the central disciplines within the cognitive sciences.

One remaining problem had to be resolved before cognitive linguistics could emerge as a viable area of investigation. Linguists had to seriously work with cultural complexity and resolve problems of linguistic diversity across languages. Linguists, it should be noted, used a formal model of language that made strong claims about the commonality of linguistic structures, i.e., a universal grammar. Anthropologists were not against the quest for universals, but merely found the current model of formal linguistics to be inadequate. They argued in favor of a position once articulated by the noted anthropologist, Lucien Lévy-Bruhl (1922), who stated that primitives do not reason badly, they only reason differently from the inhabitants of industrialized nations. Lévy-Bruhl was arguing against the majority of the European scholars of his time who had argued that the mind of the primitive was pre-logical and hence inferior. Lévy-Bruhl argued that the fundamental structure of the mind is the same everywhere. Nevertheless, after much interaction with contemporary psychologists (Shore, 1996), he was successful in getting them to modify their approaches to language and culture. What anthropologists wanted to attack was the claim that linguistic forms are universal and common in all language. What is common, they noted, is the ability of human beings to create frames, schemas, scripts, and other forms of cognitive expression. Languages and cultures differ in how these common instruments of cognitive expression are employed.

Once the focus shifted from the study of form to the investigation of the cognitive processes underlying symbolic interaction, Lakoff and Johnson (1980) were able to more fully articulate their concept of cognitive linguistics in their highly influential treatise on language and metaphor. Later, Lakoff (1987) would go on to detail the implications of this new approach to the cognitive sciences, which he called cognitive linguistics. Particular explications of how these concepts function in grammar took on the name of cognitive grammar (Langacker, 1987) and functional discourse theory (Givón, 1993). The whole movement was reinforced by the related concept of grammaticalization (Hopper and Traugott, 1993) in which the process of creating grammatical forms from regular lexical items was shown to be a cognitive process. Langacker, it should be noted, developed a model of language that treats human languages as consisting solely of semantic units, phonological units, and symbolic units. He assumes that these structures are motivated by general cognitive processes. Functional discourse grammar, on the other hand, is motivated by cognitive functions.

**What is Grammaticalization?**

Traditional scholars of historical linguistics have always had a problem with those who make strong claims about the universals of language. They have much experience in
studying language change and are only too familiar with numerous case studies in which
old linguistic categories are lost or new ones are created within a language. Once
linguistic research moved away from formal representations of language and towards
language pragmatics (i.e., how one uses language in a social context), historical linguists
found themselves adapting to the newer theory of cognitive linguistics. What they have
been studying is called grammaticalization. This process occurs when new grammatical
items or constructions are developed from within a language via the cognitive processes
of metaphor, metonymy, and other major tropes. Language, it was argued, uses metaphor
to create new constructions, new meanings, new categories, and new semantic domains.
Consider the following example (Heine, 1997: 8).

Source Pattern: They keep the money.
New Pattern: They keep complaining.

Here one has a linguistic frame composed of an agent, a verb of retention, and a
physical object. The new pattern is created by using the old pattern in a new
metaphorical context. In lieu of money, one retains a non-physical object, a process
involving complaints. This new metaphorical use of language raises several interesting
questions. Has the verb “to keep” become polysemous or does the new use of “keep”
create a new verb in the process.

Keep + physical objects
Keep + verbal process

It could be argued that that a new verb form was created in this metaphorical process.
There are many examples of linguistic creativity that involve new constructions based on
metaphor. Consider the use of prepositions and verb particles and how they operate in
language. Givón (1993: 138-143) gives the example of preposition stranding (at the end
of a sentence) as the grammaticalization of a new (phrasal) verb form, consisting of a
verb and a verb particle originating from the preposition:

Source Pattern: They broke the house.
Metaphorical Extension: They broke up the house.
New Verb Form: They broke the house up.

These kinds of constructions can be traced back to the time of Shakespeare. This
kind of grammaticalization is common to Germanic languages (Heine, 1997). The
metaphorical constructions in English become obvious when one compares these new
two-word verbs in English with translations in non-Germanic languages, for example, as
in Portuguese.

<table>
<thead>
<tr>
<th>English (Two-Word Verbs)</th>
<th>Portuguese (The words listed below are not translations but equivalent concepts)</th>
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<tbody>
<tr>
<td>Basic Form</td>
<td>Quebrar (to break)</td>
</tr>
<tr>
<td>To break</td>
<td>Estourar. Uma guerra estourou (a war broke out). Libertar-se (to free oneself)</td>
</tr>
</tbody>
</table>
| Metaphorical Verbs | To break in | Domar  *O cavaleiro domou o cavalho* (The man broke the horse in).  
Forçar. *Eles forçaram uma entrada* (They forced entry). |
|--------------------|-------------|----------------------------------------------------------|
| To break up        | partir-se (to break up a group)  
Desmanchar. *Os noivos desmancharam* (The lovers broke up).  
Quebrar em pedaços. *Quebra o chocolate em pequenos pedaços.* (He broke up the chocolate into small pieces). |
| To break down      | Romper. *A pobre mulher rompeu em lágrimas* (The poor woman broke down in tears).  
Arrombar. *A policia arrombou a porta do quardo* (The police broke down the door of the room).  
Analisar *O cientista analizou o problema* (The scientist broke the problem down).  
Sofrer. *Os casais sofrem uma crise nervosa* (The couples broke down into a nervous crisis).  
Desatar. *Ela desata a chorar* (She broke down and cried).  
Fracassar. *Depois de perder o premio, seus sonhos se fracassaram* (After losing the prize, his dreams were broken). |
| To break through    | Progredir. *As suas ideias progrediram o ramo de estudo científico* (His ideas caused a break through in his field of scientific study). |
| To break off        | Romper  
Os E. U. A. romperam relações com Cuba (The US and Cuba broke off relations).  
Interromper.  
*O repórter interrompeu a entrevista* (The reporter broke off the interview).  
Partir. *Ele se partiu do grupo* (He broke off from the group). |
| To break even       | Sair sem ganhar nem perder. *Saímos sem ganhar nem perder dinheiro* (We left breaking even). |
| To break into       | Arrombar. *Nossa casa tem sido arrombada por um ladrão* (Our house was broken into by a thief). |
| To break free, loose| Soltar-se. *O animal saltou da armadilha* (The animal broke loose from the cage). |
| To break open       | arrombar (to break open something in order to get inside) |
| To break the news   | Dar a notícia. *Eles dararam a notícia a Marta* (They broke the news to Martha). |

What is interesting about these constructions in English is that they began as Verb+Preposition Constructions and ended up as Verb+Verb Particle Constructions.
There appear to be three stages in the grammaticalization of two-word verbs in English (Hopper and Traugott, 1993). The first stage is where the prototype construction (archetype) or the canonical forms can be found. The second stage emerges as metaphorical versions of the prototype and the last stage is where reanalysis has taken place and new verb forms emerge.

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![Diagram](attachment:Diagram.png)

**New Verb Forms, two-word verbs**

Before leaving this discussion of grammatical metaphors, it is important to note that Portuguese and other Romance languages tend to use morphological metaphors for their construction of new concepts. These forms can be found in words in English that came from Latin: ex-plode, im-plode (from in+plode). Hence, Portuguese has numerous morphological constructions that differ substantially from those of English. The reason for this is simply because Latin used a different set of metaphors in conjunction with morphological prefixes.

Latin: *prehendere* (Latin: to hold or grasp); *cum prehendere* (Latin: to hold or grasp with the hand); *Solare* (Latin: to be alone), *in-solare* (Latin: to be isolated), *insula* (Latin: island, an isolated place), *paene-insula* (Latin: peninsula, an almost isolated place).

**How are Categories Created and Defined?**

The major breakthrough in cognitive grammar came about in the 1950s when both anthropologists and psychologists replaced the philosophical concept of a logical grammar with a more pragmatic model that was based on communicative intent. This focus on logical form had been such a dominant cultural imposition in Western intellectual history that it was very difficult to differentiate what philosophers wanted language to be from what it really was. The classical view of categorization can be traced back to Aristotle who felt that natural objects in the world could be categorized into groups and defined by unique attributes. In Aristotle’s example of deductive logic, ‘Socrates’ is categorized into the group of ‘men’, which is defined by the attribute ‘mortal’.

- **Major Premise:** Socrates is a man
- **Minor Premise:** All men are mortal
- **Conclusion:** Socrates is mortal

This view of categorization has certain interesting assumptions. It is predicated on the belief that categorization is, in essence, a theory of reference. This provided philosophers of language a way of discussing the real world of physical objects. It is
based on the assumption that the attributes that define classes of objects are shared by all of its members. Furthermore, it was believed that the intension (the set of attributes) determines the extension of a category to which items are members. In other words, categories within classical philosophy did not have internal structure\(^5\).

**Why was Classical Categorization Theory Replaced?**

What changed this reliance on traditional models of philosophical categorization came from the work of Eleanor Rosch (1978). In her visit to study the Dani in New Guinea, she found that the speakers of this language had only two color terms: *mola* for bright, warm hues and *mili* for dark, cold ones. After exposing the Dani to forty color chips in order to study their perceptual abilities, she confirmed that they indeed had a very different culture, a confirmation of her belief in the Sapir-Whorf hypothesis\(^6\). However, upon continuing her investigation, she discovered some rather surprising information. She noted that the Dani did physiologically recognize colors in a manner very similar to those of Americans. The differences in naming colors were perceptually structured in the same way as among others outside of this cultural milieu. The Dani used similar strategies in the storage, remembrance, and recollection of colors. They differed in how they were categorized in their own language. Humans do not differ in how their nervous systems organize colors, but how they name them, place them into categories. As Lakoff (1987) has noted, recent research on color categories argue that cultures differ as to the location of the focal points of ideal colors, i.e., the prototype colors for color categories differ across cultures because they have different focal points. In some cultures, for example, the colors of blue and green have focal points that are closer to each other, and for this reason many shades of blue and green overlap and are seen as color confusion by those outside of the cultural matrix.

Rosch continued her research into other aspects of linguistic categorization. She was intrigued by the fact that in many cultures there are thousands of words for birds, but no one overall category for birds (Palmer, 1996). In the United States, for example, one can readily find a general categorization of all birds into a common class (Rosch, 1978).

- **Superordinate Level:** Birds
- **Basic Level:** Prototype with the exemplar of a robin
- **Subordinate Level:** blue bird, black bird, jay bird, cardinal ....

What does it mean to say that a superordinate level or a general class for birds does not exist? What Rosch found was that in these cultures exemplars or prototypes can be used

\(^5\) This view of categorization was challenged by Ludwig Wittgenstein who argued for a family-resemblance model of language. There is no one defining feature that constitute membership into a class known as the family of X. Instead, each member of the class shares a family-resemblance to his kin. Some may have similar structures with respect to their mandibular joints; other may have the same kind of curvature of the eyebrow. There is no one defining feature shared by all of them.

\(^6\) Rosch, it should be noted, was a student of Eric Lenneberg, the Brazilian medical doctor who went to MIT to study linguistics and earn his second doctorate there. Lenneberg was highly interested in the Sapir-Whorf hypothesis and favored a milder version of the theory. His student, Eleanor Rosch, shared this quest. Her research over the years was directed towards resolving the controversy surrounding this theory.
to designate a whole class or category. It is as if native speakers of English referred to 
the class of all birds as robins.

Her findings were no longer a challenge to the traditional concept of categorization. 
Others were soon to follow with other cultural examples of the new categorization system 
(Dirven and Verspoor (1998).

Category:   chair
Prototype:   kitchen chair (Exemplar)
Non-Prototypes:  swivel chair, office chair, high chair, arm chair, 
wheel chair, desk chair, electric chair, etc.

What is interesting about categorization is that some of the senses of a category are closer 
to the prototype and therefore more naturally belong to the same class of objects. Others, 
such as electric chair, are marginal as a member of the class of objects categorized as chairs.

Cognitive psychologists (Howard, 1987) learned that people do not categorize their 
experiences of the world in accordance with traditional logic. In other words, people do 
not participate in the in creation of logical forms espoused by advocates of transformational grammar 
(Senft, 2000; Taylor, 1995). Humans create 
categories for things, places, events, and experiences. Their representations are ideal. For example, the 
category of bird is represented by an ideal bird, which in North America, is the robin. In Australia, the 
ideal category for a bird may be the canary and in Brazil, it may be the parrot. These ideal examples are 
called exemplars. What is important about exemplars is that they provide a richness of details 
associated with the human experience. So, if one 
mentions a bird, the category invokes an exemplar 
that connotes wings, a certain wing shape, a certain 
color, a certain kind of beak, flight patterns, food 
prefeferences, etc. Although one would like to believe that these categories refer to the real world (Kant’s noumena)7, it does not. Categories are phenomenological. They reflect the 
perceptual structure of the perceiver. Even though categories harbor prototypes, what 
constitutes a prototype is usually culturally defined.

In addition to categorizing experiences, events, and percepts in terms of a basic 
member or prototypes, categories are further organized with regard to superordinate and 
subordinate levels. A chair, for example, is a category by itself. However, it belongs to a 
larger category of furniture. The prototype represents the basic level for a category. It is

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7 Immanuel Kant made a distinction between noumena (the real world that can never be known) and phenomena (the world as perceived by human beings). In spite of this distinction, logical positivists have tried to make their theory of language into a theory of reference. The new cognitive grammars are not concerned with theories of reference. They believe that language is about phenomena and not noumena. They also contend that realities are social constructions.
the one that is most easily learned by children and most readily recalled by them (Rosch, 1978).

What is interesting about this theory of categorical levels is that it accounts for lexical networks. Words, it has been argued, do not exist alone. They are part of semantic domains. They relate to each other within lexical networks (Minsky, 1975). Hence, when one thinks of a door, other elements are invoked that are part of a door. This study of the relationship of the parts to the whole is called mereology. Hence, the lexical item “door” invokes such related concepts as “door knob, key, key hole, door jamb, front of the door, back of the door,” etc. Lexical networks that have been investigated by linguists in the past were based on genetic relationships, diachronic relationships over time, e.g., the relationship that exists among words such as father, paternal, patronymic, etc. The new approach to networking is functional and cultural. There are cultural reasons for creating lexical networks and these differ over time and place.

Diachronic linguistics is replete with how lexical networks change through time. One can find interesting examples of these changes within the history of the English language. For example, in Old English, creatures were defined in a category that was based on
movement in space. This network structure is evidenced in the following Old English words:

\[
\begin{align*}
\text{vogel} & \quad \text{(bird)} = \text{movement in space} \\
\text{fisch} & \quad \text{(fish)} = \text{movement in water} \\
\text{wyrm} & \quad \text{(worm)} = \text{movement under ground} \\
\text{tier} & \quad \text{(animal)} = \text{movement on land.}
\end{align*}
\]

This spatial classification is interesting because the metaphor of space was a significant part of medieval thought. This metaphor even included the Great Chain of Being whereby humans where visualized as belonging to a vertical space in which the Pope was closer to God and the masses were closer to animals. Hence, this metaphor was used to legitimate the divine rights of kinds and the traditional constructs of medieval social hierarchy (Lovejoy, 1936).

\[
\begin{align*}
\text{Clericus} & \quad \text{(the clergy)} \\
\text{Milites} & \quad \text{(the military)} \\
\text{Labores} & \quad \text{(the peasants).}
\end{align*}
\]

How does the Prototype Theory Work in Linguistics?

It is interesting to study the change of these lexical networks through time. In modern English, \textit{meat} refers to the flesh of animals used for food. In Old English, \textit{mete} simply meant food.

\[
\begin{align*}
The \textit{mete} \text{ shall be mylk, honey and wyne.} & \quad \text{(mete = food)} \\
\text{After mete, before mete, at mete} & \quad \text{(mete = meal)} \\
\text{boef vs kuh} & \quad \text{(beef versus cow; beef is mete or edible flesh)} \\
\text{lambe vs mutton} & \quad \text{(lamb vs mutton, mutton is mete or edible flesh)} \\
\text{It is mete and drinke} & \quad \text{(mete = food)}
\end{align*}
\]

What changes over time is the exemplar. At one time the \textit{exemplar} of ‘mete’ was food. There were other senses of this word such as a meal, a kind of food (not a drink), and the fleshy parts of animals (\textit{boef, mutton}). Over time, one of the senses of the category of \textit{mete} emerged as the prototype of a new category, \textit{meat}.

\[
\begin{align*}
\text{Old English} & \quad \textit{mete} \\
\text{Modern English} & \quad \textit{meat}
\end{align*}
\]

\[8\] This word is still retained in German where \textit{Tier} refers to all animals. In English, \textit{tier} became a particular kind of animal, a deer.
What was a secondary sense of food in Old English becomes the primary meaning behind the modern English word _meat_. This change of meanings over time raises even more significant questions about the social history of the world of Old English as compared to Modern English. There more interesting questions behind these prototypical shifts remain to be resolved within the context of social history. What culinary customs transformed this re-categorization from Old English to Modern English? Was this development based on a practice within one subculture before it spread to others or was it an intrinsic part of the culture as a whole? The new cognitive model brings linguistic theory back into the center of research in the humanities.

Another interesting shift in lexical networks over time can be found in the two senses of the word _dog_ between the 14th and the 16th centuries. During the earlier period, the general category was that of hounds. There were many kinds of hounds: poodles, spaniels, greyhounds, and dogs. The prototype of this category was the dog and the exemplar of the dog was the mastiff, a large strong kind of dog that was used to guard houses. Later during the 16th century, the major category was the dog. Under the new categorization, dogs included the mastiff, poodles, spaniels, and greyhounds.

<table>
<thead>
<tr>
<th>14th Century</th>
<th>16th Century</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prototype: Hound</td>
<td>Prototype: Dog</td>
</tr>
<tr>
<td>Exemplar: Mastiff</td>
<td>Exemplar: Mastiff</td>
</tr>
<tr>
<td>Senses, extensions:</td>
<td>Senses:</td>
</tr>
<tr>
<td>Poodles</td>
<td>Poodles</td>
</tr>
<tr>
<td>Greyhounds</td>
<td>Greyhounds</td>
</tr>
<tr>
<td>Spaniels</td>
<td>Spaniels</td>
</tr>
<tr>
<td>Dogs</td>
<td>Dogs</td>
</tr>
</tbody>
</table>

Once again, one may what has transpired in this time frame to cause this shift in how hounds were re-categorized as dogs?

**Language as Symbolic Interactionism**

What one learns from this new approach is that language, it turns out, is not about the real world. It is not based on a theory of reference as envisaged by philosophers of language. Language is about how human beings organize and represent concepts (Heine, 1997; Dirven and Vespoor, 1998). Language is not a positivistic enterprise. It is phenomenological. Sociologists, for example, provide an interesting approach to how individuals interact symbolically. They call it *conversational images* (Hewitt, 1976).

*Conversational Images*

When two people meet each other for the first time, they create in their own minds what that other person is like. They create images of the other

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9 In Old English, this word was _hund_. The high back vowel was lengthened and underwent diphthongization [uw] and a vowel shift [ow] resulting in Modern English _hound_. The German lexical equivalent of _Hund_ did not undergo these changes as the vowel was not lengthened before a nasal cluster.
based on various kinds of information deriving from their culture, life
styles, and past experiences. What is interesting is that when these same
individuals meet again, they do not directly address each other, but they
talk to the conversational image they have of the other person. These
images are maintained for decades as evidenced by how parents still see
their adult children as “my little girl” or “my little boy.”

They same concept is involved in one addressing an audience. One does not actually
address individuals, but has an image of others and talks to that image. There are,
however, some interesting issues regarding the interaction of a speaker with his or her
audience. The concept of an audience exists in the mental space\textsuperscript{10} created between
individuals.

**Why are Schemas, Frames, and Scenarios Important?**

Plato and Aristotle both had their own theories of knowledge. In Plato’s model, he
envisioned an abstract world of ideal eternal forms. What one sees and knows in
everyday life are instances of those ideals. In Plato’s model, perfect geometric forms
exist in one’s mind even though one never sees them or experiences them. All that they
experience are the phenomena of decaying changing forms of everyday life. Immanuel
Kant (1781) took this concept of ideal types and modified it into schema theory. In his
version of a theory of knowledge, one creates in the mind an image that represents the
perception of an object, event, or experience. What this amounts to is an image based on
concrete experiences rather than abstract universals. In Kant’s model, schemata exist
between ideal eternal forms (Plato’s Ideal Forms) and the material world (Plato’s
Material Expressions). Now why is this concept important and why do cognitive
linguists adhere to this view of knowledge?

The answer comes from cognitive psychologists who argue that human beings use
schemas\textsuperscript{11} to represent concepts. Furthermore, language is an instrument that enables
human beings to organize these concepts, categorize their socially constructed realities,
and share them with others in shared moments of mental space. Language, it is argued, is
essentially based on the concatenation of concepts (schemata theory) rather than symbols.
It is how human beings represent concepts and share them with each other. Here are
some of the more common schemas (Heine, 1997: 90-98; Dirven and Verspoor, 1998: 82-
90).

<table>
<thead>
<tr>
<th>Label of Schema</th>
<th>Linguistic Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>X takes Y Action</td>
<td>John grabs the book</td>
</tr>
<tr>
<td></td>
<td>John takes the book</td>
</tr>
<tr>
<td></td>
<td>John seizes the book</td>
</tr>
<tr>
<td></td>
<td>John holds the book</td>
</tr>
</tbody>
</table>

\textsuperscript{10}Mental Space is that temporary period of human cognizance that occurs in one’s mind or in the joint
attentional space between two interacting minds.

\textsuperscript{11}Psychologists used to use schemata as the plural of schema. They have now adopted schemas as the
plural form. Another point of interest that needs to be mentioned is that there are some who distinguish
between schemas and frames. That practice is not followed in this presentation. Finally, when schemas are
organized into sequential plans of action, they are called scenarios. This syntagmatic concept of sequence
can be found in plot structures, and in conversational or discourse structures.
| Y is located at X | Location | John is at home  
|                 |         | John is in church  
|                 |         | John is near the house  
| X is with Y     | Companion | John is with Mary  
|                 |         | John is here with Mary  
|                 |         | John and Mary are here  
| X’s Y exists    | Genitive | Turkish. Kitab-im var (my book exists) “I have a book”  
| Y exists for X  | Goal     | French: Le livre est á moi (the book is to me) “I have a book”  
| Y exists to X   |          |  
| Y exists from X | Source   | John is from Spain  
| As for X, Y exists | Topic   | As for John, he knows Mary  
| Y is X’s (Y)    | Equation | The car is mine  
| Being Schema    | Identification | This is Cleveland  
|                 | Class Membership | John is a student  
|                 | Attribution     | John is happy  
|                 | Location        | John is here  
|                 | Existential     | There is a book  
| Happening Schema| Eventing       | The weather is clearing up  
|                 |               | The stone is rolling down the hill  
|                 |               | The dog is whining  
|                 |               | His health is improving  
| Doing Schema    | Agent         | John got up  
|                 |               | He painted the wall  
|                 |               | He destroyed the picture  
| Experiencing Schema | Patient | Harry saw a snake  
|                 | Experiencer   | He knows that it is dangerous  
|                 |               | He thinks that he feels better  
|                 |               | He feels happy  
| Having Schema   | Material Possession | Doreen has a house  
|                 | Mental Position | John has an idea  
|                 | Affected-affection | John has (the) flu  
|                 | Whole-part     | The table has four legs  
|                 | Kinship Relations | John has two sisters  
| Moving Schema   | Source-Path-Goal | The apple fell from the tree  
|                 | Spatial        | They searched from noon to midnight  
|                 | Temporal       | The weather changed from dark to sunny  
|                 | States         |  
| Transferring Schema | Receiver and Goal | John gave Mary a cake  
|                 |               | John gave a cake to Mary  
|                 |               | John gave the door a coat of paint  

In addition to the organization of concepts into schemas, language also enables its users to have the opportunity to socially construct knowledge through various instruments of symbolic interaction such as lexical elements, sentence patterns, etc.
• Language is used to talk about things that exist in space and time, hence, the use of concrete nouns.
• Language provides means of organizing and portraying temporal events such as seasons, days, etc.
• Through language one can talk about abstractions that neither exist in time nor space (abstract nouns).
• Through language one can distinguish between animate and inanimate beings by using noun classes designated for that purpose: cow, human vs. rock, sand.
• Nouns can also be used to connote entities and as names to denote entities: A professor vs. John.
• Nouns are structured syntagmatically and paradigmatically to designate different semantic roles (case theory): John (Agent) read the book (Patient).
• By means of affixes, new concepts are morphologically created: write > writer, a writing, etc.
• Dimensions of space and time can be marked and measured as when qualities are converted into entities such as wide > width, steal > stealth, heal > health, etc.
• Events can be restructured through suffixes as in the case of child > childhood.
• Language allows its users to combine categories to make compound entities (mail-man).
• Adjectives are used to denote states, such as when happy, an adjectival form, denotes that state of being happy. Happiness, the noun form, is used to mark the state or event.
• Through adjectives one can create evaluative descriptions and judgments, such as John is happy with his present. John is certain that he will go.
• Through the use of suffixes, one can compare qualities (bigger, smaller, equal to, the biggest, etc.)
• Some suffixes allow one to take actions and make them into states (abuse > abusive).
• Language allows one to negate events, states, and experiences, as in un-kind, illogical, atheistic.
• In language verbs constitute the core of a semantic frame. Verbs are also the first grammatical forms to emerge in child language (Steinberg, 1982).
• In language one finds various devices to create and state causative relationships (large >enlarge)
• Language provides numerous devices that allow the modification of time through aspect markers: John has seen Mary, John is seeing Mary.
• Language also provides numerous devices that allow the modification of actions in the form of manner adverbs or adverbial phrases: John broke it with a hammer.
• Although language allows one to make proclamations of truth, certainty and probability by means of epistemic adverbs (it is true, certain, probably, etc.), the search for truth is not the major use of language as envisioned by philosophers. Sociologists see language as a means for negotiating social reality rather than the search for truth.
• Some languages have modals as epistemic verbs and others have subjunctive paradigms.
• Language also allows one to express obligation, attitudes, through perceptive and
cognitive utterances (obligation, hope, fear, etc.)
• Experiences can be quantified through language as evidenced by function words,
such as some, all, and many.
• We depict states as existing conditions with no change and do this by means of
adjectives (happy means being in a happy state)
• Language allows one to depict events as change in state over time. John got
drunk, John was sick, etc.
• Language allows one to depict actions that are initiated by an agent (indicative
voice) from those that are not (middle voice). In many languages, an action is
depicted without focusing on the agent doing the action. In English, one says “he
washed his hands” but in Spanish the expression is “the hands wash themselves.”
There is a new verbal function in English called the “get-passive” which has the
function of the middle voice. For example, the dishes got washed. The use of the
agent is demoted.
• Language allows for topic control by various devices such as movement rules
(pseudo cleft construction, topicalization, etc.).
• Languages allow for process copulas such as get a life, become happy, etc.
• Languages allow for stative copulas such as seem, appear, etc.
• Languages allow for state of being constructions such as John is at home = being
at a location.

All of these devices exist in language and allow individuals to socially construct
social realities that they share and interact with symbolically. Non-verbal communication
lacks this great specificity of socially constructing reality. Without language, the social
construction of reality would be severely curtailed. Meanings are negotiated within a
commonly shared mental space, a joint attentional space (Tomasello, 1999). Coherence
results when this negotiation of meaning succeeds. The aforementioned constructions are
just the basic tools that constitute human communication. Through the use of metaphor,
metonymy, and other fundamental tropes, these devices are used to create newer
categories, events, schemas, and scenarios.

Concluding Remarks

Metaphor plays a dominant role in language. It is one of the major forces behind
linguistic creativity. Metaphor is not only used to create new lexical domains, but also for
new grammatical constructions. This new use of metaphor is a major part of the focus of
this presentation. To understand how grammatical constructions can be metaphorical,
one needs to delve into the emergent theory of cognitive linguistics with its new research
interests in conceptualization, categorization, grammaticalization, and the use of language
for the communication of meaning. This is not to say that linguistic forms are not
important. They are. However, forms are used for the purpose of communicating in a
meaningful way. This new theory of communicating meaning consists of schemes,
frames, and scenarios. It employs a phenomenological approach to language and differs
substantially from the older positivistic paradigms in linguistics.
The older models of language assumed that language consists of grammatical symbols. With the advent of postmodern models of language, it has become evident that traditional concepts of representation need to be revised. Language consists not of symbols but of concepts and other meaningful forms. These meanings are not fully assigned to lexical forms. Dictionary definitions alone cannot account for the sociology of language. Meanings, it should be noted, are imposed onto words and are negotiated through social discourse. This is concomitant with postmodern models of language that argue. They argue that meanings are not contained in objects such as words, pictures, and other forms of representation but are imposed on them. These objects, they contend, serve to invoke the meanings of these forms in the mind. This approach to language is well established in communication research and differs from how language is viewed by those linguists and language teachers who treat language as mere symbolic forms. The implications of this new approach are that language teachers should not only teach forms, but concepts and experiences in their interaction with students. Culture is based on daily patterns of social interaction. These patterns, explicit and implicit, constitute culture from an ethnomethodological approach. Consequently, language education needs to be embedded in cultural experiences that are semantically organized around the linguistic domains of everyday life. In other words, language is connected to the practical knowledge of everyday life.

References


