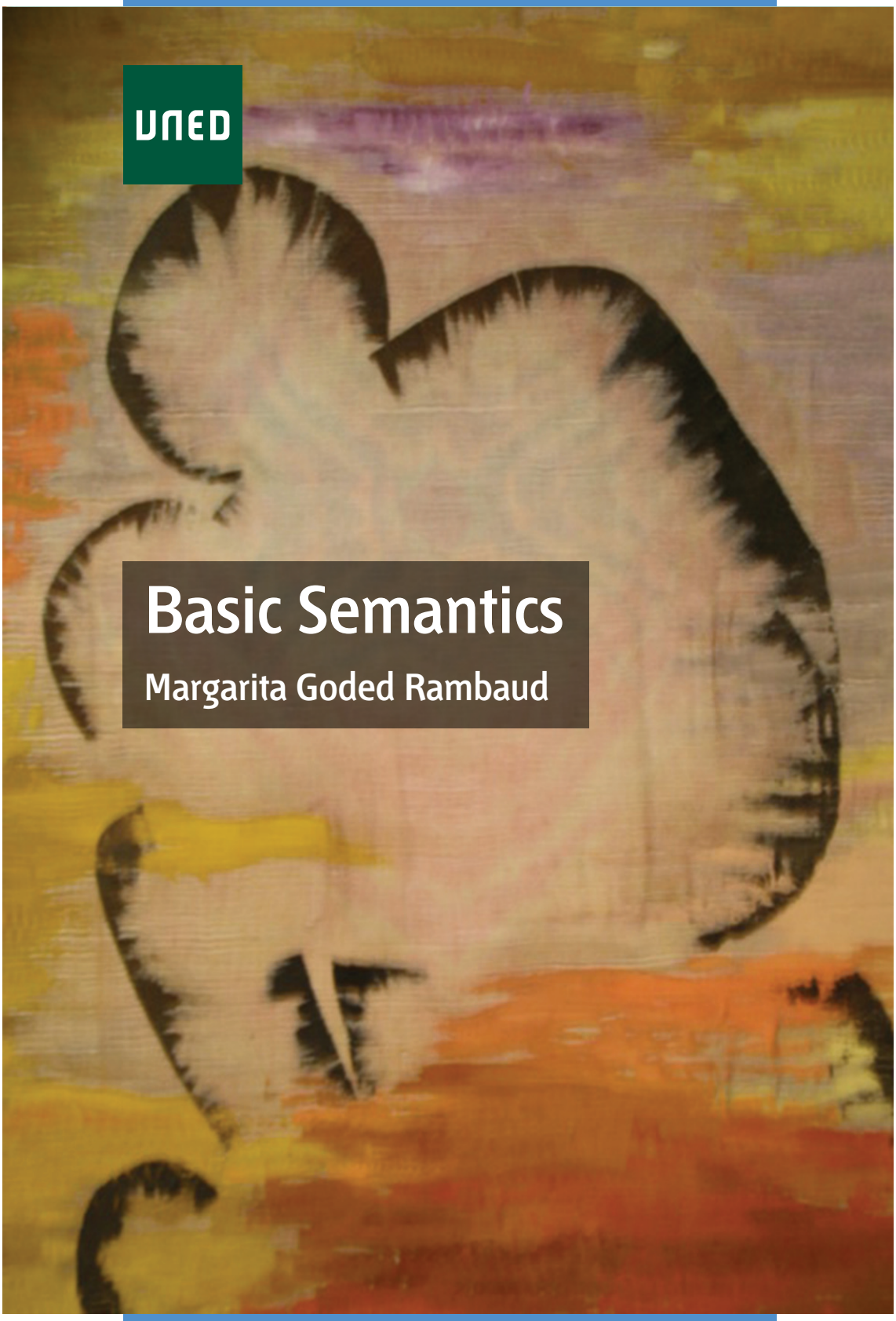
UNED
Basic Semantics
Margarita Goded Rambaud

Basic Semantics

MARGARITA GODED RAMBAUD

UNIVERSIDAD NACIONAL DE EDUCACIÓN A DISTANCIA

BASIC SEMANTICS

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ISBN electrónico: 978-84-362-6235-3

Edición digital: febrero de 2012

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This is an introductory book to semantics for undergraduate students with some linguistic background. However, non specialized previous semantic knowledge is needed to understand it.

The aim of the book is to help readers to grasp the main issues dealt with in semantic analysis in connection with linguistic analysis. This book does not support any particular semantic or linguistic theory, but, rather, it tries to offer the reader some of the most relevant approaches in semantics, emphasizing its particular contributions and, sometimes, noting its weak points.

The book is organized in ten lessons, which are grouped in three different units. Unit I, *An introduction to the science of meaning*, includes two lessons dedicated to deal with basic concepts such as units of analysis, linguistic theories and their relations with the most widely used semantic concepts. Lessons three and four deal with the relations and overlappings of semantics and related disciplines, such as logic and pragmatics. Unit II, *Paradigmatic and syntagmatic relations*, constitutes the central part of this book and deals with the main topics in semantic analysis. This analysis is taken from the perspective that the key to the understanding of the meaning of a word should always be attempted in connection with other related words either present or absent in the linguistic structure that the word is part of. Unit III, *An introduction to cognitive semantics*, reviews the most basic aspects concerning human cognition and some related theories.

I have used parts of this book in previous courses on semantics at the UNED and I would like to thank my students for their comments and responses which have been very useful in writing this book. I would also like to thank my colleagues, Maika Guarddon and Ana Ibañez, for their comments and help. Needless to say is that for any weakness no one but me should be blamed.

UNIT I

AN INTRODUCTION TO THE SCIENCE OF MEANING

Lesson 1
Basic concepts I

1.1. Communication and Language.
    1.1.1. Branches of the study of meaning.
    1.1.2. Overlap between Semantics and Pragmatics.

1.2. Different units of analysis: words, utterances, sentences, and propositions.
    1.2.1. Words.
    1.2.2. Utterances, sentences, propositions and texts.

1.3. Meaning and the world. Different dimensions of meaning.
    1.3.1. Reference, denotation and sense.

1.4. Types of meaning.
    1.4.1. Descriptive and non-descriptive meaning.
    1.4.2. Functional meaning and content meaning. Lexical meaning and grammatical meaning.
    1.4.3. Literal and non literal meaning.
    1.4.4. Contextual meaning.
        1.4.4.1. Senses, homonymy, polysemy and ambiguity.
    1.4.5. Extensions of meaning: metaphor and metonymy.

Suggested readings for lesson 1.

Exercises and activities.

References.

Objetives:

— To understand the concepts of communication and language and the relationships which hold between them.

— To understand the different types of units of analysis: words, utterances, sentences, and propositions.

— To understand the different dimensions of meaning.

— To distinguish the different types of meaning and their extensions.

— To understand the most basic notions that affect semantic analysis.

1.1. COMMUNICATION AND LANGUAGE

For many authors, Cruse among others, meaning makes little sense except in the context of communication. In consequence, the notion of a simple model of communication is introduced following Lyons (1995). Cruce (2000) explains how, if language is conceived of as a sign system, a simple model representing the process of communication serves to put meaning in context. This includes a speaker who has something to communicate, that is a message. However, since a message in its initial form cannot be transmitted directly, it has to be converted into a signal. In oral language this involves linguistic encoding, which in turn involves translating the message into linguistic form and also translating the linguistic form into a set of instructions to the speech organs so that the signal is executed via an acoustic signal. It is this process of linguistic codification of meaning that we are most interested in these first two lessons.

1.1.1. Branches of the study of meaning

There are different orientations within the general field of semantics as such and different authors classify the field in a slightly different way. For example, Lyons (1995) defines semantics as the study of meaning and linguistic semantics as the study of meaning in so far as it is systematically encoded in the vocabulary and grammar of natural languages. Cruce, in a simpler way, divides semantics into three subfields: lexical semantics, grammatical semantics and logical semantics.

There are various distinct areas in the study of meaning. If we follow Cruse (2000:15) lexical semantics focuses on 'content' words (*tiger, daffodil, inconsiderate*) rather than 'grammatical' words (*the, of , and*). Grammatical semantics in turn, studies aspects of meaning which have direct relevance to syntax. However there is some overlapping with lexical semantics, such as how to deal with grammatical morphemes like *-es, -er,* etc.

Finally, logical semantics (also called formal semantics) studies the relations between natural language and formal logical systems such as propositional and predicate calculi. Such studies try to model natural languages as closely as possible using a tightly controlled, maximally austere logical formalism. According to Cruse, such studies have concentrated on the propositional/sentential level of meaning, rarely attempting to delve into the meaning of words.

1.1.2. Overlap between semantics and pragmatics

There are certain overlappings which can be identified between different disciplines such as Semantics and Pragmatics. The problem of where to draw the line between them is not easy. Saeed (2001) points out that, although the semantics-pragmatics distinction is a useful one, the problem emerges when we get down to details. He further argues that one way to solve the problem is to distinguish between sentence meaning and the speaker's meaning, suggesting that words and sentences have a meaning independently of any particular use and it is the speaker who incorporates further meaning into sentence meaning.

Another way of seeing this comes from Bennett (2002), who bases his distinction between semantics and pragmatics on concepts such as implicature and entailment. And still another perspective comes again from Saeed (2001), who links the semantics-pragmatics overlapping to the concept of presupposition. This has always been an important concept in semantics but the increased interest in it can be seen as coinciding with the development of pragmatics as a subdiscipline. The basic idea is that semantics deals with conventional meaning, that is to say, with those aspects of meaning which do not vary much from context to context, while pragmatics deals with aspects of individual usage and context-dependent meaning.

1.2. Different units of analysis: words, utterances, sentences, propositions and texts

When dealing with the nature of meaning, Cruse (2000) and Lyons (1995) agree that it is difficult to define this concept. The definition of words as meaningful units poses several problems since different criteria come into play in the definition of a word. Lyons differentiates words from expressions. He proposes that words as expressions can be defined as composite units that have both form and meaning and suggests a more

technical term: 'lexeme'. It must be noted that not all lexemes are words and that not all words are lexemes. Lyons points out that it is word-expressions (and not word-forms) that are listed in the dictionaries. They are traditionally known as headwords or dictionary entries. This distinction is related to the "type/token» distinction. We will take this definition of word as a basic starting point. That is, we will take word-expressions as the basic word definition and we will identify them also as dictionary entries.

1.2.1. Words

Cruce explains how most people have the intuition that meaning is intimately bound up with individual words; that this is what words are for.

If we study meaning in language we are forced to consider that we are talking of different types of meaning depending on the different unit of analysis we are referring to.

Even if defining a word is not an easy task and one could try and say what a prototypical word is, a word can be defined as a minimal permutable element. Words are, most of the time, separated by silence in spoken language and by spaces in writing. We can also identify words as dictionary entries.

In unit 5, we will learn more about the differences between words, lexemes and word forms.

1.2.2. Utterances, sentences, propositions and texts

The difference between utterances, sentences and propositions is an essential one. The three terms are used to describe different levels of abstraction in language. These different levels of abstraction allow us to identify different units of analysis in relation to meaning. An utterance is created by speaking or writing a piece of language. It can also be said that an utterance is any stretch of talk, by one person, before and after which there is silence on the part of that person. If someone says *Today is Tuesday* in a room, this is one utterance; if another person in the same room also says *Today is Tuesday* in the same room this is another utterance. Hurford comments that

> *It would make sense to say that an utterance was in a particular accent (i.e. a particular way of pronouncing words). However, it would not make strict sense to say that a sentence was in a particular accent, because a sentence itself is only associated with phonetic characteristics*

> *such as accent and voice quality through a speaker's act of uttering it. Accent and voice quality belong strictly to the utterance, not to the sentence uttered.*

Sentences, on the other hand, are abstract grammatical elements obtained from utterances. Sentences are abstracted or generalized from actual language use. Differences in accent or pitch do not alter the basic content of the sentence. Saeed explains that speakers recognize that these differences are irrelevant and discard them. Hurford (1983) defines a sentence as neither a physical event nor a physical object. Is is, conceived abstractly, a string of words put together by the grammatical rules of a language. A sentence can be thought of as the ideal string of words behind various realizations in utterances. Thus, a given English sentence always consists of the same words in the same order.

Examples:

1. *Jim picked up the children* and *Jim picked the children up* are **different sentences.**
2. *Mary started her lecture late* and *Mary started her lecture late* are the **same sentence.**
3. *Went to the toilet James* and *Mary the put on hat* are not English sentences. However, there are languages, such as Spanish, where word order is less important.
4. *Mary started her lecture late* and *Mary started her lecture late* pronounced by two different persons are **different utterances.**

Regarding the concept of proposition, Saeed thinks that one further step of abstraction is possible for special purposes, such as to identify the logical content of a sentence. In trying to establish rules of valid deduction, logicians discovered that certain elements of grammatical information in sentences were irrelevant, for example, the difference between active and passive sentences because active and passive sentences share the same state of affairs. Another possible definition of proposition (Hurford & Heasley, 1983) is

> *that part of the meaning of the utterance of a declarative sentence which describes some state of affairs.*

This takes us to the concept of argument structure which we will study in more detail in the following lesson as a conceptual tool. For the time being let us assume that there is a level of abstraction at which everything we want to talk about can ultimately be conceived of as either an entity

or a relation among entities. The argument structure relates a relation or function with a number of arguments. Thus, in propositions logicians identify verbs as functions with subjects and objects as arguments of the function. One common way of representing formulas for propositions is by writing the verb as a function and its subject and objects as arguments, of such a function as in:

Fx (a,b)

For example:

brake (Mathew, glass)

end (war)

tell (Lucas, lie, Nicholas)

Propositions capture part of the meaning shared with other sentences. For example, the statement *Lucas told Nicholas a lie*, the question *Did Lucas tell Nicholas a lie*? and the command *Lucas, tell Nicholas a lie!* might be seen to share a propositional element: LUCAS TELL NICHOLAS LIE. However these different sentences make the speaker do different things with the same proposition: assert it as a past event; question it or request someone to perform it. As a result, we see that propositions capture only part of the meaning of a sentence. Saeed summarizes these ideas saying that **utterances** are real pieces of speech, and by filtering out certain types of (especially phonetic) information we can abstract grammatical elements, that is **sentences**. Then, filtering out again certain types of grammatical information we can get to **propositions**. Propositions thus are descriptions of states of affairs which some writers see as a basic element of sentence meaning.

This has to do with the logical structure of sentences, which capture the more abstract components of information transmission.

The more we go down to the real world of talking and speaking, the more complex the units of analysis become. For example, trying to represent an utterance calls for ways of representing intonation, context and many more elements that affect the production of speech. Likewise, if we go bottom up, from utterances to sentences, we shake out other aspects, such as those related to the speech act, and we disregard types of sentences, such as passives, interrogatives etc. And, if we climb up, still another step into abstraction, we get the skeleton of information; that is, just predicates and arguments. Because of this, levels or degrees of abstraction and different types of units of analysis in linguistic description are related.

1.3. MEANING AND THE WORLD. DIFFERENT DIMENSIONS OF MEANING

1.3.1. Reference, denotation and sense

Denotation has to do with the human cognitive capacity of making concepts and using words to name such concepts. When a child is learning to speak and he/ she is able to differentiate and group various types of animals, he/she will be able to say *cat* and *dog*. He/she then will be **denoting** and saying that this particular dog is a member of that particular group of animals.

When it comes to explaining denotation, Lyons (1995) points out that words may be put into correspondence with classes of entities in the external world by means of the relation of denotation. In addition, denotation is intrinsically connected with reference and some authors (particularly those who subscribe to a referential theory of meaning) draw no distinction between them. Lyons, however, differentiates them and bases his approach on the two ways in which language maps on to the world, which leads to the difference between *reference* and *denotation*. He explains that the *denotation* of an expression is invariant and it is utterance-independent: it is part of the meaning which the expression has in the language-system, independently of its use on particular occasions of utterance. *Reference,* in contrast, is variable and utterance-dependent.

But Lyons also mentions Odgen and Richards' (1923) distinction between *referent* and *reference*. *While the term 'referent'* specifies any object or state of affairs in the external world that is identified by means of a word or expression, the term *'reference'* points to the concept which mediates between the word or expression and the *'referent'*. Different types of reference include noun and noun phrases. In addition, there are referring and non-referring expressions. The referential uses of different nominals have produced a vast amount of research in to the philosophy of language, covering names, common nouns, definite nominals, etc.

In connection with this, the concept of 'sense' is introduced. The sense of an expression may be defined as the set or network of sense relations that hold between it and other expressions of the same language. Descriptive synonymy, for example, is a sense relation. Sense is an interlexical or intra-lingual relation; it defines relations within the same language. On the other hand, denotation relates expressions to classes of entities in the world.

Frege (1970[1892]) provides the basis for the distinction between sense and reference and its further development from a formal logic point of

view. He introduced some structure in meaning content distinguishing between reference (Bedeutung) and sense (Sinn). The object that an expression refers to is its **reference** whereas the specific way used to express it is its **sense**. For example, for him

Beethoven's home town

and

The former capital of the Deutschland's Republic

both have the same reference, Bonn, but different sense.

Other authors approach these differences from a more linguistic point of view. Saussure (1945) distinguished between *signifier* and *signified* and held that the meaning of linguistic expressions derives from two sources: the language they are part of and the world they describe. Again for him, the relationship by which language hooks onto the world is called **reference**, whereas the question of the semantic links between elements within the vocabulary system is an aspect of their **sense.** In Saussurian terms, the signifier would be the referent while the signified would be related to other terms in the same language. This distinction explains how the referent of the British Prime Minister and the Head of the British Conservative Party may or may not be the same person depending on who is who at a particular time. This apparently simple distinction has important consequences in semantics.

There are two main approaches to defining 'sense'. Cruse among a group of semanticists uses this concept to define some kind of mental representation of the type of thing that can be used to refer to. Other authors define 'sense' by saying that it is a matter of the relations between a word and other words in a language. Sense for them is an interlexical or intra-lingual relation; it defines relations within the same language.

Hurford & Heasley (1983) explain that, while the referent of an expression is often a thing or a person in the world, the sense of an expression is not a thing at all. They also find it difficult to say what sort of entity the sense of an expression is because the sense of an expression is an abstraction in the mind of the speaker.

Gregory (2000) defines *sense* as what he calls a more intuitive sense of meaning; what remains constant when the referent changes. He also adds that, if we know the sense of a word, we will be able to pick out its referent in any particular set of circumstances, as long as we know the appropriate facts. As a result, Gregory identifies denotation and sense.

Other authors, such as Lyons, understand sense as a matter of the relations between a word and other words in a particular language.

The difference between reference and denotation has to do with abstraction as well. Reference points to something specific and clearly identifiable at some point. For example, if someone uses the phrase "the queen", this person is likely to be referring to *Queen Elisabeth II* in UK and most probably to *Queen Sofía* in Spain. However, its denotation is something more abstract since it will include all those individuals that could be referred to by using the word "queen". That is classifying objects into those which come under the heading "queen" and those which don't. For example, the referent of "yesterday's paper" varies depending on when the expression is used and the speaker's reading habits.

As Gregory (ibidem) explains, this difference is related, to the difference between type and token. Two/one euro coins are two different objects but they are instances of "the same thing". They are two tokens of one type of object. Similarly, the 11 a.m flight to Copenhagen is the same flight every day, although the actual aircraft used and the aircrew may be different. In other words they denote the same flight but the actual referents are different.

To make things even more complicate, logicians use the pair intension / extension to refer to similar concepts. For them, the ***extension*** of the concept **dog** is the set made up of all possible dogs in the world, whereas its ***intension*** is made up of all the features which characterize a dog.

All these notions are related to concepts. Saeed adopts the position that the meaning of, say, a noun, is a combination of its denotation and a conceptual element. This conceptual element poses two further questions: what form can we assign to concepts? and how do children acquire them along with their linguistic labels? Both questions are highly relevant to the purpose of this work and will be addressed in connection with the section devoted to classical and conceptual categorization in chapter 9.

As a conclusion, following both Lyons and Cruse, we can still use the same example (*The cat is hungry*) and we can say that the class of cats constitutes the **denotation** of the word cat, whereas the **referent** of cat in this particular example is the specific cat the speaker is talking about. To sum up, denotation relates expressions to classes of entities in the world, whereas reference points to the specific entity (concrete or abstract) that the speaker is referring to.

1.4. TYPES OF MEANING

1.4.1. Descriptive and non-descriptive meaning

We can distinguish between descriptive and non-descriptive meaning. Cruse, based on Langacker, sticks to Lyons' terminology and maintains the term *descriptive meaning* for what others have labelled as *ideational, referential, logical,* or *propositional* meaning. Cruse also lists a number of prototypical characteristics that descriptive meaning displays. Among them we can mention the following: this aspect of meaning determines whether a proposition is true or false, it constrains what the expression can be used to refer to, it is objective in the sense that it establishes some distance between the speaker and what he says and, finally, this aspect of meaning is fully conceptualized. Cruse offers an extensive treatment of the different dimensions of descriptive meaning, such as quality and intensity, and he also explains the main characteristics of non-descriptive meaning.

A further distinction can be identified between lexical and grammatical meaning on the one hand and literal and non-literal meaning on the other. While lexical meaning is related to an open-set class of items or content words, grammatical meaning refers to a closed-set class of items or grammatical words. In relation to this distinction, Cruse introduces the major problems that lexical semantics faces. He approaches this field in connection with contextual variation and notes that there are various theory dependent strategies for tackling the problem regarding sense relations and structures in the lexicon and the problems of word meaning and syntactic properties. Some approaches to lexical semantics are introduced in connection with this in the following lessons.

The difference between literal and non-literal meaning is also studied in relation to extensions of meaning. Cruse explains how this difference leads to the study of metaphor and metonymy. Metaphor can be analyzed from the rhetorical angle, basically as a literary or stylistic resource or as a much more complex cognitive resource. The emphasis within the cognitive linguistics framework is placed on the latter, as will be shown in unit 3 (lessons 9 and 10).

1.4.1.1. Descriptive meaning

Quality is the most important dimension of variation within descriptive meaning and it is this which constitutes the difference between *black* and *white*, *pear* and *banana*, *here* and *there*, *walk* and *run,* and *eat* and *drink*.

Differences of quality can be found at all levels of specificity. This is why different hierarchies of semantic domains or different ontological types can be identified. A frequent set of ontological types at the highest level of generality is the following:

THING , QUALITY, QUANTITY, PLACE, TIME, STATE, PROCESS, EVENT, ACTION, RELATION, MANNER.

Cruce explains how these represent fundamental modes of conception that the human mind is presumably innately predisposed to adopt. At lower levels of generality there are also hierarchically arranged sets of conceptual categories. For example:

Living things: humans, animals, fish, insects, reptiles..

Animals: dogs, cats, lions, …

Dogs: collies, alsatians, spaniels…

In addition there are also non descriptive dimensions of meaning such as expressive meaning and evoked meaning. For example, the differences between

a) *Gosh!*

and

b) *I am surprised*

shows that a) is subjective, expresses an emotional state in much the same way as a baby's cry, and does not present a conceptual category to the hearer whereas b) represents a proposition, which can be questioned or denied and can be equally expressed by someone else or at a different place or time. In a sense both "mean the same thing" but vary in the mode of signifying. Words that possess, only expressive and nondescriptive meaning and are called expletives. For instance in the following examples

a) It's freezing; shut the *bloody* window!

b) Read your *fucking* paper!

the expletives in italics do not contribute to the propositional content.

Evoked meaning, on the other hand, refers to the difference in meaning that results from using different dialects or different registers. Cruce exemplifies the power of evoked meaning saying that it would be almost unthinkable for publicity material for tourism in Scotland to refer to the geographical features through which rivers run as *valleys*, although that is precisely what they are: the Scottish dialect word *glen* is *de rigueur*.

1.4.2. Functional meaning and content meaning. Lexical meaning and grammatical meaning

As is well known in any basic linguistic study, words can be important because of what they mean, and are called **lexemes** (roughly nouns, verbs, adjectives and adverbs in English), or their importance come from the role they play in the organization of the language and they can be termed **function words** (articles, prepositions, pronouns in English or Spanish).

We will learn more about lexemes and their definition in lesson 5.

Thus a distinction can be identified between lexical and grammatical meaning in relation with whether they constitute an open class of words or a closed-set class of words. While lexical meaning is related to an open-set class of items or content words, grammatical meaning refers to closed-set class of items or grammatical words. An open-set class of words can accept a new item each time a new term is needed. For example all the new words coined in relation to the use of computers belong to an open-set class of words. However it would be difficult to "invent" a new preposition.

The traditional distinction between variable and invariable parts of speech is also related to this classification. In computational terms, this is also an important distinction because the processing of a closed-set class of clearly defined functional words is easier than the processing of a large, open-set class of words with blurred boundaries.

Cruse 2000, defines closed-set items as follows.

1. They belong to small substitution sets
2. Their principal function is to articulate the grammatical structure of sentences.
3. They change at a relatively slow rate through time, so that a single speaker is unlikely to see more or less close-set items.

These may be contrasted with open set items that have the following characteristics:

1. They belong to relatively large substitution sets.
2. There is a relatively rapid turnover in membership of substitution classes, and a single speaker is likely to find many losses and gains in a single lifetime.
3. Their principal function is to carry the meaning of a sentence.

1.4.3. Literal and non literal meaning

In the following examples Saeed (2001) identifies this basic distinction, where, if one afternoon you are feeling the effects of a missing lunch, you may speak literally as in (a) or non-literally as in (b), (c) and (d).

a) I'm hungry

b) I'm starving

c) I could eat a horse

d) My stomach thinks my throat's cut

Thus, there is a basic distinction between instances where the speaker speaks in a neutral, factually accurate way and instances where the speaker deliberately describes something in untrue or impossible terms in order to achieve special effects.

Nonliteral uses of language are traditionally called figurative and are described by rhetorical terms such as metaphor, irony, metonymy, synecdoche, hyperbole and litotes. They will be studied more thoroughly in following lessons. However, it is difficult to draw a neat line between literal and nonliteral uses of language. Saeed explains that this is, among other things, because one of the ways language changes over time is by speakers shifting the meanings of words to fit new conditions. One such shift is by metaphorical extension, where some new idea is depicted in terms of something more familiar.

For a while the nature of a metaphorical expression remains clear but after some time such expressions become fossilized and their metaphorical quality is no longer apparent to speakers. It is doubtful, for example, whether anyone using the air service between Madrid and Barcelona or between London and Brussels would think of looms or sewing machines when talking about catching a *shuttle*. Because the vocabulary of a language is littered with fossilized metaphors like this one, it is difficult to decide the point at which the use of a word is literal rather than figurative.

Cruse is of the opinion that this difference leads to the study of metaphor and metonymy. As it was said above, metaphor can be analyzed from the rhetorical angle, basically as a literary or stylistic resource or as a much more complex cognitive resource. The emphasis within the cognitive linguistics framework, as will be explained in lessons 9 and 10, is placed on the latter.

1.4.4. Contextual meaning

The fact that meaning varies from context to context is one of the most evident problems in semantics. How can any addressee clearly understand what kind of *bank* the speaker is referring to when he hears *They swiftly rowed to the bank* and *She is the manager of a local bank?* This is something that is intuitively solved because the context; the linguistic context in this particular case, leads you to the appropriate interpretation. That is, the context disambiguates the problematic interpretation of the word. There is no need to have an extensive variation of meanings, if their interpretation can be fixed by the context in which the word is uttered. Language, as a system of communication, maximises its resources in the most economic way.

1.4.4.1. Senses, homonymy, polysemy and ambiguity

Ambiguity is a problem that is becoming more and more relevant because of the pervasive use of all kinds of computational devices where natural language in involved. While the human mind is able to disambiguate words, using information obtained from the context or from his/her sensory input, a machine cannot do this unless it is adequately trained. Thus the treatment of ambiguity in NLP (Natural Language Processing) is an increasing area of research in semantics, closely related to the concepts of synonymy and homonymy.

If there is more than one sense in a word, there is ambiguity in words like *bank* or *light* in the expressions:

She went to the bank (What kind of bank did she go to?)

or

She was wearing a light coat (was she wearing a light coloured coat or a not heavy one?).

In these cases the lexicographer will normally give two different entries to each one:

bank 1: place where money is kept / bank 2: the edge of a river

and

light 1: not of a strong colour / light 2: not heavy in weight.

In these cases we will say that *bank 1* and *bank 2* and *light 1* and *light 2* are **homonyms**. However there might be a connection between senses, as in the following examples:

I fall asleep in a very uncomfortable *position*.

She has now been promoted to a much better *position*.

What is your *position* on the death penalty?

In these cases we say that the word *position* is **polysemous** or that it manifests **polysemy**.

Cruce explains how there are also other sources of ambiguity that are not exclusively lexical. This is the case of syntactic ambiguity. In the example.

John saw the man with a telescope.

there are alternative constituent structures where *with a telescope* is either a manner adverbial modifying *saw*, or a prepositional phrase modifying *the man*.

Syntactic ambiguity can also be functional. In the classic example taken from Hockett's telegram (*Ship sails today*) we can see how both words, *ship* and *sail,* can exchange their syntactic functions and lead to two totally different meanings: an order to ship sails and an assessment explaining a fact.

1.4.5. Extensions of meaning: metaphor and metonymy

The Oxford Advanced Learner's Dictionary defines metaphor as "The use of a word or phrase to mean something different from the literal meaning". The role of metaphor as a mental mechanism has been recognized since the Greeks, although in the classical tradition, metaphor was considered essentially as a stylistic device. However, Lakoff and others have argued that there is much more to metaphor than a mere beautifying stylistic resource. Lakoff claimed that metaphors are not only features of certain styles but essential components of human cognition.

Mainly based on Lakoff (1980, 1993 and 1999), there are various approaches to metaphor and they will be studied in lessons 9 and 10. The mechanism of interpretation of metaphor, however, is always the same: look for relevant resemblances.

SUGGESTED READINGS FOR LESSON 1

— For a model of communication see Cruse (2000: 5-6).

— On the definition of words see Cruse (2000: 87-89).

— On the difference between utterances, sentences, and propositions see Saeed (2001: 1-15); (2003: 12) and Cruse (2004: 19-25).

— For an explanation of the difference between sense and reference see Saeed (2001: 12-13); (2003: 12).

— For the difference between referring and denotating and for an interesting definition of the so called representational theories see Saeed (2001: 23-27) (2003: 23-27). See also Cruse (2000: 21-22).

— For the differences between sense, denotation, and reference, and related concepts such as intension and extension see, Cruse (2000: 21-22) and Saeed (2001: ch. 2; 2003: 23-32).

— On descriptive and non-descriptive meaning see Cruse (2000, 2004: 46-61).

— On the differences between lexical meaning and grammatical meaning see Cruse (2000: 89-95, 2004: 87-88).

— On the differences between literal and non-literal meaning see Saeed (2001: 15-17) (2003: 15-16) and Cruse (2000: 199, 2004: 195).

— On extensions of meaning see Cruse (2000: 199-201, 2004: 195-198).

— For a short history of meaning see Wilks (1996: chapter 2).

EXERCISES AND ACTIVITIES

Practice (adapted from Hurford, 1983).

Answer yes/no to the following questions.

a) Do all authentic performances of 'Othello' begin by using the same sentence?

b) Do all authentic performances of 'Othello' begin by using the same utterance?

c) Does it make sense to talk of the time and place of a sentence?

d) Does it make sense to talk of the time and place of an utterance?

e) Can one talk of a loud sentence?

f) Can one talk of a long sentence?

Answers: a, yes; b, no; c, no; d, yes; e, no; f, yes.

By means of reference, Hurford & Heasley (1983) say that the speaker indicates which things or entities in the world we are talking about. Note the following examples adapted from the above-mentioned authors.

1. What would be the referent of the phrase *the present Head of the Spanish Government*
   a) in 1995? .....
   b) in 2002? .....
   c) in 2005? .....
2. Therefore we can say that the phrase *the present Head of the Spanish Government* has

   .....
3. What would be the **sense** of the phrase the *Head of the Spanish Government used in a conversation about*
   a) *Spanish politics in 1992.*
   b) *Spanish politics in 2000.*
4. In the light of the preceding questions, the reference of an expression vary according to
   a) the circumstances (time, place, etc.) in which the expression is used
   b) the topic of conversation in which the expression is used
   c) both (a) and (b).

Key:

1. a) Felipe González
   b) José María Aznar
   d) Jose Luís Rodríguez Zapatero
2. reference.
3. a) see 1a.
   b) see 1b
4. c

EXERCISES

1. Fill in the chart below with + or - as appropriate. Thus, for example, if it makes sense to think of a proposition being expressed in a particular regional accent, put + in the appropriate box; if not, put – (Hurford and Heasley, 1983: 22).

	Utterances	**Sentences**	**Propositions**
Can be loud or quiet			
Can be grammatical or not			
Can be true or false			
In a particular regional accent			
In a particular language			

2. Can the same proposition be expressed by different sentences? (Hurford and Heasley, 1983: 23).

3. Can the same sentence be realized by different utterances? (Hurford and Heasley, 1983: 23).

4. The words *mean, meaning,* and related ones are used in a variety of ways. In the following examples, say whether what is intended is sense or reference.
   a) *Postpone* has the same meaning as *put off*.
   b) When he said 'my brother', he meant John
   c) If you go to the disco, you will see who I mean.
   d) What do you mean, you've been 'fooling' me?

5. Distinguish at least two senses of the following words. Provide two examples of items (either individuals or objects) which fall within the denotation of each word sense and give an example in which they are the intended referent.
   a) eye.
   b) foot.
   c) head

6. Answer these questions:
   a) Is *a man* in *John attacked a man* a referring expression?
   b) Is *a man* in *John is a man* a referring expression?

7. Read the following words and mark what is most important in each of them.

	Content meaning	Relational meaning
Submarine		
After		
Subtle		
Between		

8. Images, like words, are difficult to interpret without a context. Try to interpret the images in pages 19 and 41 and compare your interpretation with the one given by someone else.

ANNOTATED REFERENCES

BERNÁRDEZ, E. 1995. *Teoría y Epistemología del Texto*. Madrid: Cátedra.

The different linguistic models providing explanations for different units of analysis (such as words, sentences, and texts) are explained here. It is also explained how the semantic processing which usually comes together with the syntactic processing seems to be interrupted when reaching the sentence borders. The characteristics which define a text compared with a sentence are offered.

LYONS, J. 1995. *Linguistic Semantics. An Introduction*. Cambridge: Cambridge University Press.

Lyons defines semantics as the study of meaning, and linguistic semantics as the study of meaning in so far as it is systematically encoded in the vocabulary and grammar of natural languages. He is also very definite about the purpose of the book, which is to relate its contents to formal semantics. He further argues that this is the main reason why he has given proportionally more space to sentence semantics and to utterance semantics than to lexical semantics.

SAEED, J. 2001, 2003. *Semantics*. Cambridge: Blackwell.

In his first chapter, the author deals with different types of meaning and the semantics discipline branches and their overlappings. He also notes that establishing a semantic component in linguistic theory involves deciding how to relate word meaning and sentence meaning. He also states that in his book he is not going to try to separate pragmatics from

semantics since it is very difficult to shake context out of language. He further argues that the structure of sentences minutely reveals that they are designed by their speakers to be uttered in specific contexts.

In relation to the problem of reference, Saeed explains how names and noun phrases, also called nominals, are the prototypical case of linguistic elements used to refer. His explanation of the difference between sense and reference is very clear. The author develops a whole theory of mental models based on sense. He explores the idea that there must be more to meaning than simply reference or denotation. He calls this extra-dimension sense, which places a new level between words and the world, a level of mental representation.

SAUSSURE, F. de. 1945. *Curso de Lingüística General*. Buenos Aires: Losada.

In his foreword to the book, Dámaso Alonso claims that, for the first time, the problem of meaning is studied in the concrete field of language and not in the abstract one of logic. Some of the most important parts of this book are Saussure's conception of meaning and his study of paradigmatic and syntagmatic relations.

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WILKS, Y. A., B. M. SLATOR and L. M. GUTHRIE. 1996. *Electric Words*. Cambridge, Massachusetts: The MIT Press.

Lesson 2
Basic Concepts II

2.1. Introduction.

2.2. Linguistic models and different semantic approaches.

2.3. Representational and denotational approaches to semantic analysis.

2.4. Componential analysis.

- 2.4.1. Background to componential analysis.
- 2.4.2. How the theory of *meaning components* works.

2.5. Conceptual tools.

- 2.5.1. Linguistic codification: lexicalization and grammaticalization.
- 2.5.2. Argument structure.

Suggested readings for lesson 2.

Exercises and activities.

References.

Objetives:

— To learn about the philosophical backgroun behind linguistic and semantic theories.

— To learn and be able to apply the basic semantic and logical concepts which underlie the linguistic codification of meaning.

2.1. INTRODUCTION

In this lesson we first study the philosophical and linguistic background to semantic analysis and then we focus on two important basic aspects in semantics. These are the idea of compositionality or the idea of meaning components and the logical concept of predication. Both concepts are considered as instrumental concepts. This means that they are understood as basic tools in semantic analysis and this is why, although they are introduced early in the course, they will be dealt with in other parts of the book as well.

2.2. LINGUISTIC MODELS AND DIFFERENT SEMANTIC APPROACHES

Deeply rooted in the two main western theories of knowledge acquisition, there are basically two kinds of analysis in linguistics. One, that can be traced back to Plato and that can also be identified again in 17c French rationalism —with Descartes as its most important proponent— appears again in the 20c with the Chomskian revolution. The other, which can also be traced back to the Greeks, and more precisely to Aristotle, reappears in 18c English empiricism, where its most important philosophers are Hume and Locke. Empiricism basically constitutes the very foundations of modern scientific and technical advances and it gives way not only to philosophical theories, important in linguistics, such as structuralism, but also to other linguistic theories such as functionalism and cognitivism.

Along with Plato's metaphor of the enchained slave living at the back of a cave who learned about the world by means of the shadows that reflected the outside world of pure ideas, this line of thought claims that knowledge is acquired thanks to the idealized structures that reside in our minds.

Aristotle, on the other hand, proposed that we acquire knowledge by means of the information that we obtain through our five senses. English empiricism emphasized the importance of collecting and elaborating data about the world to build up knowledge.

On the one hand, formal approaches to the study of language emphasize the idea that language is basically a human faculty or capacity, which indeed it is, usually avoiding the question of what this capacity is for.

Functional approaches, on the other hand, emphasize the importance of the function of language, focusing on the idea that the organization of the linguistic system is based on its main aims, that is, communication and interaction. The different branches of functionalist theories share the idea that *language is an instrument of social interaction among human beings* (Dik 1989: 3) used with the intention of *establishing communicative relationships*. They also share the idea that *the question of how a language is organized cannot be profitably studied in abstraction from the question of why it is organized the way it is, given the communicative functions which it fulfils* (Dik 1989: 6). This definition reveals the instrumentality of language with respect to what people do and achieve in social interaction and it is also described (ibidem) as a *structured, cooperative activity*.

Cognitivism (Langacker 1987: 13), claiming to be within the empiricist tradition, holds that there is no separation of linguistic knowledge from general knowledge and

> *that even if the blueprints for language are wired genetically into the human organism, their elaboration into a fully specified linguistic system during language acquisition, and their implementation in everyday language use, are clearly dependent on experiential factors and inextricably bound up with psychological phenomena that are not specifically linguistic in character*

In connection with the idea of the instrumentality of language Cognitivism also claims that the *lexicon, morphology, and syntax form a continuum of symbolic units serving to structure conceptual content for expressive purposes* (Langacker 1987: 35).

However, things in linguistics are not that clear cut and both rationalism and empiricism have contributed to the advance of science in general and linguistics in particular in many important ways. Cognitivism in particular has kept some Cartesian and Kantian contributions to the characteristics of mental elaborations and has emphasized the importance of symbolization processes in linguistic organization.

There are some ideas that can help to identify the differences between a formal, rationalist tradition to linguistic analysis and a functional, empirically based linguistic tradition.

These ideas include the link between knowledge and language, the definition of language, what kind of knowledge is linguistic knowledge, the basic aspects of language acquisition, the relationship between language description and philosophy and, finally those kinds of methods of analysis which are mainly used in linguistics.

	Formal Approach	**Functional Approach**
The link between knowledge and language	Independent aspects (modular)	Deeply interrelated aspects
Definition of language	Language is a human faculty or capacity	Language is a system of communication or information transmission
The knowledge of language	Based on linguistic competence	Based on communicative competence
Language acquisition	Specific linguistic aspects are innate and constitute Universal Grammar	Language learning and acquisition is part of general learning mechanisms that imply interaction. There is an innate anatomical and neurological base which favours linguistic acquisition
Language description and philosophy It has to do with the epistemological position held in connection with the form-function relation.	Linguistic description is independent of any role language might play	The communicative function of language determines, to some extent, linguistic organization
Rationalism favours the concept of innate forms over the concept of function. **Empiricism** gives more importance to the concept of function. Structuralism in linguistics claims that much of the form of linguistic units depends on the function or role they play in higher structures	Rationalism: Method of analysis based on the recognition of pure ideas and on intuition	Empiricism: Method of analysis based on observable data
Methodological aspects of linguistic analysis Strongly connected with the preferred approach to knowledge acquisition . Closely linked to the source of data (intuition or linguistic data)	Data: based on grammaticality. Grammaticality is based on intuition and introspection Unit of analysis: Clear-cut units. E.g.: the clause	Data: based on real language use (corpora) Grammaticality is a function of information transmission. Unit of analysis: less clearly delimited. E.g.: the text.

For formal approaches to linguistic analysis, there is no link between knowledge and language, since both human characteristics are considered to be independent and, basically, modular. On the other hand, functional and cognitive approaches to language see both aspects as deeply interrelated. As a result, the knowledge of language is based on linguistic competence for formalists, whereas, for functionalists, it is based on communicative competence, and seen as a much wider and comprehensive capacity.

Partly as a consequence of these views, generativists- the most relevant exponents of the formal approach in linguistics – define language, as a human capacity or faculty, but they don't usually mention what such capacity is for.

The concept of innatism is an important issue in the understanding of language acquisition. The recognition of the effects of environment, that is, the influence of human interaction in the development of human linguistic abilities, is another important factor to be considered. However, formal approaches to language acquisition hold that, because these pre-conditions are genetically established, there are specific linguistic aspects that take the form of a Universal Grammar of the kind proposed by Chomsky. Nobody really denies the importance of biological prerequisites in the development of language but, while functional approaches tend to emphasize the effects human interaction, formal approaches see innate prerequisites as the more influential factor.

The platonic-rationalist tradition has contributed in various ways to the advance of linguistics and one of its most important contribution has to do with the configuration of symbolic or idealized mental structures. But this tradition also tends to confuse our innate cognitive capacities for generalizing and abstracting with the existence of independent abstract entities of the mind. This leads to the emphasis that a certain group of semantic theories, gravitating around the concept of meaning components, give to the idea of linguistic universals. In other words, it is possible to establish a connection between the importance given to form, the hypothesis of linguistic universals, the pre-wired conceptual structures in the line of Jackendoff on the one hand, and the meaning components theory in semantic analysis, on the other.

Functionalist and cognitivists alike, recognize the importance of biological endowment and acknowledge that there is an innate anatomical and neurological base which favours linguistic acquisition, but, unlike generativists, they don't claim any particular model to represent universal linguistic features.

Also connected to the importance given to innate endowment for language acquisition, are certain philosophical theories (Plato, the French rationalism, Kantian idealism...), supporting the idea that there are pure idealized forms which the minds of human beings recognize. These theories are linked to formal theories of language, whose preferred method of scientific analysis —when assessing the grammaticality of a sentence, for instance— is to rely on the intuition of the native speakers of that particular language.

On the other hand, functional approaches are historically linked to the Aristotelian idea that all knowledge human beings have about the world around them comes from the information obtained by means of the five senses which is then processed and interconnected by the mind. Later on, other philosophical trends in the same line (empiricism) developed the idea that scientific knowledge is only built upon observable data.

The consequence of these differences for linguistic analysis is that formal approaches favour the idea that linguistic data is based on grammaticality, which, in turn, is based on intuition and introspection. Functionalists, on the other hand, hold that linguistic data should be based on real language use, and retrieved from corpora. Grammaticality, in turn, is considered to be a function of information transmission and communication, but not the only and indisputable source of data.

Finally, because of the importance that formalists give to innate linguistic forms, the basic unit of analysis that formalists recognize, is the clause, which is a clear cut type of unit. In contrast, functionalists accept the idea that linguistic units may not always be that clear cut and with well delimited units, and that their boundaries, sometimes, overlap among them. Because of this, functionalists also claim that linguistic units, sometimes, have fuzzy limits.

It can be concluded that language, as a symbolic system, allows for both communicative and symbolic functions. However, it is not the communicative character of language that allows abstraction, but its symbolic capacities.

The emphasis on considering language as, both an information transmission system and as a human communication system, leads functionalists and cognitivists to see the organization of language (with grammar as one of its most important subcomponents) basically dependent on the different roles that each element plays, towards a more efficient information transmission. In addition, to see human experience as a central organizational element in language has determined cognitivist theories of language.

One possible approach to the delimitation of semantics as an area of study is to understand it as a whole in which all the parts serve the general communicative purpose, which is to convey meaning. According to this view, if any unit in any linguistic component changes, there is a change in meaning. As a result, meaning is a product of all linguistic levels *because a grammatical construction inherently serves to structure semantic content* (Langacker 1987: 38). The strong version of this view is cognitive grammar. However, from the organizational point of view, the study of different linguistic subcomponents, where meaning could be just one among them, may still be useful.

2.3. REPRESENTATIONAL AND DENOTATIONAL APPROACHES TO SEMANTIC ANALYSIS

Parting company from Lyons' tradition and based on the difference between two main functions of language —referring or denoting on the one hand and representing on the other— two approaches to meaning can be proposed. These are referential (denotational) theories and representational theories. Both groups of theories draw heavily from the above-mentioned philosophical and linguistic traditions and, although representational theories tend to be more linked to rationalism and referential (denotational) approaches tend to be aligned with empiricism, there are frequent cross-influences and cross-fertilizations between the two lines of thought.

The influence of the rationalist tradition in representational approaches in semantic analysis can be identified in the work of Katz and Fodor, and later on in the work of Jackendoff. These authors, well established within the generativist tradition, acknowledge that they have developed their respective semantic theories to fit the Chomskian paradigm. For semanticists like Jackendoff (1983, 1990, 1996) semantic analysis involves discovering the conceptual structure which underlies language. For this linguist the search for meaning is the search for mental representations. In these theories of meaning the emphasis lies in the way our reports about reality are influenced by the conceptual structures conventionalized in our language.

However the rationalist tradition has also influenced the work of other linguists such as Langacker in the sense that, although he recognizes *that mental experience is real and susceptible to empirical investigation and that it constitutes the natural subject matter of semantics* (Langacker 1987: 99), the units of analysis that he defines in his cognitive grammar constitute idealized objects.

The empiricist-functionalist tradition, on the other hand, holds that, because language is basically an instrument to transmit and communicate messages, it allows us to talk about the world around us and, by doing this, we use language to describe or model facts and situations. As Saeed (1997: 269) says,

> *from the formal semantics perspective, understanding meaning of an utterance is being able to match it with the situation it describes. Hence the search for meaning, from the denotational perspective, is the search for how the symbols of language relate to reality*

For this tradition, the action of linking words with the world is meaning, so that in order to provide a semantic description for a language we need to show how the expressions hook onto the world or we need to explain how the meaning of words and sentences relates to situations. From this perspective, understanding the meaning of an utterance is being able to match it with the situation it describes. Hence, the search for meaning, from this referential or denotational perspective, is the search for how the symbols of language relate to reality.

This relation is characterized by using the correspondence theory, that is using the notion of truth. The branch of semantics that follows this line is called formal semantics, truth-conditional semantics, model theoretic semantics, logic semantics and also Montague Grammar.

The term *formal* however can be misleading as it is used differently depending on whether we are referring to general linguistics or semantics. Because the so called *formal* linguistic theories usually refer to the generativist paradigm and because formal semantics uses a highly technical and formalized representational apparatus, it has been frequently linked to generativism. It is the case that there is a theory of formal semantics with rationalist ascent such as that of Katz and Fodor. However, there are also various highly formalized semantic models which do not claim to belong to the generativist area of influence, particularly within the artificial intelligence applications of semantic analysis.

In a sense, there is a certain opposition between conceptual semantics and truth and referentially based semantics. However, in the view of certain authors, like Lehrer and Kittay (1992), truth and referentially based semantics has little or nothing to say about the organization of the lexicon, whereas most conceptual semanticists (allegedly linked or not linked to the generative grammar framework) understand organization to pertain to the lexicon either through the interrelation of concepts composed of a common stock of primitives or through the relational links between concepts organized through frames, fields, and contrasts.

Analyzing reference, Saeed (2001:46) recognizes that it is difficult to use this concept only as the whole theory of meaning since our semantic knowledge seems to include both reference and sense. As we have just seen there are two different approaches to our ability to talk about the world: a denotational approach, which emphasizes the link between language and external reality, and a representational approach, which emphasizes the link between language and conceptual structure. Each approach, Saeed says, has to answer certain key questions. For example, how do denotational approaches cope with our ability to talk about imaginary or hypothetical entities?

In this lesson, two approaches to meaning have been introduced: meaning from the point of view of mental representations, and meaning from the point of view of its relation with the situation it describes. The connection between each view and the underlying philosophical position they involve is also important.

Componential analysis can also be seen as a just one more kind of semantic analysis which helps making semantic compatibility more explicitly. We'll learn more about this and other related concepts such as selection restrictions in lesson 7.

2.4. COMPONENTIAL ANALYSIS

The kind of analysis that uses a list of identified meaning components to define a word is often called componential analysis. This theory or semantic methodology is also called *semantic primitives* or *semantic components*. Thus componential analysis can be viewed as a privileged instrument of semantic analysis, or alternatively, as a particular semantic theory. The perspective taken in this book is the first. However the theoretical background of componential analysis is also developed in certain respects.

Under the view that semantic representation should involve semantic components, there is a group of authors that share the idea that these components are primitive elements which combine to form units at the level of grammar. It is the nature of combination that distinguishes the views adopted by the different authors. Katz and Fodor originally proposed a list of components. Jackendoff proposed a more articulated representation where components are arranged as functions and arguments which can be successively embedded within one another. Still others have held that semantic components help to characterize semantic relations, such as entailment. This idea of componentiality is very important and will be returned to in various parts of the following lessons.

2.4.1. Background to componential analysis

CA or semantic decomposition has a long history in semantic description with roots in European structuralism (Saussure and Hjelmslev) and American anthropology.

One important objective of componential analysis has been to achieve an effective reductive analysis of meaning. The Danish linguist Louis Hjelmslev, a representative of early European structuralism and a disciple of Saussure, applied Saussure's phonological principles to semantic analysis. Hjelmslev was probably the first to apply a componential program to semantic analysis since he believed that the meaning side of the linguistic sign should show the same structuring principles as the sound side. What he seemed to have in mind was the discovery of a set of basic words, out of whose meanings all other word meanings could be constructed.

This method, originally used to explain phonemic analysis, was based on **commutation**. A phonemic difference was said to exist between two different elements of the expression plane when substitution of one for the other entails a change in the content plane. For example, the voiced/voiceless difference between [p] and [b] leads to differences in the meaning of [pin] and [bin] whereas the aspirated bilabial stop in [ph] is not a different phoneme from the unaspirated [p] because a change of meaning is never associated with the choice of one rather than the other.

This is exemplified by Cruce (2000: 244) applying the principle of symmetry to semantic analysis. The meaning of [*mare*] can be separated into components according to the following sequence: [HORSE] and [FEMALE] and if the second element is changed into [MALE] the resulting element in the plane of expression is then *stallion*.

There are several approaches to a componential view of meaning. They all share the idea that the meaning of a word is constructed out of smaller, more elementary, and invariant units of meaning. According to componentialist semanticists, the meaning of a word can be specified in isolation from the meanings of other words in a language. This is known as a localist view, which can be accounted for by rules of interaction with context. The opposite position is the holistic view, which holds that meaning cannot be known without taking into account the meanings of other words in a language. In one version of holism, influenced by Hass (1962, 1964) and Wittgenstein (1972), meaning is closely related to use and, furthermore, the meaning of a word is related to the semantic field it belongs to. For Hass, the meaning of a word is its semantic field which, in turn, has two dimensions: a syntagmatic dimension, in which all possible

(grammatically well-formed) contexts of the word were arranged in order of normality, and a paradigmatic dimension, in which for each context, the possible paradigmatic substitutes for the word were arranged in order of normality.

In the same vein, Lyons (1977, 1995) believes that the sense of a lexical item consists of the set of sense relations which the item holds with other items which participate in the same field. In his view, meanings are relational because they are constructed on the basis of contrasts within the same system. Lyons is an inheritor of Jespersen's view that there are notional universals in language which spring from the nature of extra-linguistic reality.

Componential analysis can also be traced back to the work of Katz and Fodor's (1963) who developed these theories apparently independently of the Structuralism in Europe and in close connection with anthropological linguistics' analysis of kinship systems. These authors designed their semantic theory as part of a Chomskyan generative grammar. Theirs was a very ambitious threefold project: first it was part of a complete theory of language; second, it made claims of universality and psychological reality; and third, the features were not confined to the meanings of existing words, but were of an abstract nature.

The projection rules use trees to structure the amalgamation of word meanings into phrase meanings and then phrase meaning into sentence meaning. These rules have certain selectional restrictions designed to reflect some of the contextual effects of word meaning and operate limiting the output. An essential part of the theory is to establish a semantic metalanguage through the identification of the semantic components. That is to say, it is a highly prototypical decompositional theory.

There are three reasons that justify identifying semantic components in componential analysis. The first one is that they allow an economic characterization of lexical relations since a small number of semantic components could be used to define a large number of words and allow comparison across languages. The second is that, according to some linguistic theories, only by recognizing them can we accurately describe a range of syntactic and morphological processes. Finally, there is an ambitious claim that semantic primitives form part of our psychological architecture as they provide us with a unique view of conceptual structure, as pointed out by Jackendoff (1983). Still another reason why componential analysis is important is that central to the conception of an organized lexicon is the understanding of the lexical, semantic, and conceptual unit.

Decomposition has been widely used as a descriptive device but has also been criticized by Lyons (1977, 1995), Allan (1986), and Cruse (1986, 2000), among others. At one extreme there is the position advocated by Fodor, who surprisingly claims that no decomposition is possible and that all words are learned and treated as wholes. At the other extreme, we find Wierzbicka's work (1980, 1985,1992,1996), who tried to work out a radical decomposition of all words into a number of primitives. In between we have Jackendoff's (1983, 1990, 1996) position. He argues for some kind of decomposition but observes that some conceptual information must be represented in other modalities.

Thus, one extreme version of componential analysis is found in the work of Wierzbicka (1996), who developed her theory in a very original way taking inspiration from Liebnitz. She holds that there is a set of universal semantic atoms in terms of which all conceivable meanings can be expressed. She proposes a list of primitives of a concrete nature that can be spelled out in any natural language.

Using different metalanguages, both Wierzbicka and Jackendoff select several of the same components, for instance (SOME)THING, PLACE, (BE)CAUSE, HAPPEN, BECOME and UNDER. However they differ in a series of fundamental ways. Wierbicka assumes and uses English syntax, whereas Jackendoff develops explicit formal rules for mapping syntactic structure onto semantic structures which are consistent with generative grammar. Thus, it is implied that there is some sort of correspondence between universal grammar and Jackendoff's conceptual structures.

Wierzbicka, on the other hand, analyzes grammatical meaning with the same methods and concepts that are used when analyzing lexical meaning. In addition, she has focused on cross-linguistic universals and on the possibility of composing concepts and lexemes out of a common store of universal primitives.

Jackendoff, like many self addressed cognitivists, locates word meaning in conceptual structure. However, in contrast to most of them, he is strongly componentialist. In other words, he believes that intuitively perceived relationships must be accounted for in terms of shared semantic building blocks. The central principle of Jackendoff's conceptual semantics is that describing meaning involves describing mental representations. For him semantic structure is conceptual structure.

This theory is also known as the Mentalist Postulate. It is a strongly rationalist hypothesis, and this author holds the idea that our conceptual structure is built up of units such as conceptualized **physical objects, events, properties, times, quantities, and intentions**. These conceptualized objects

are in our minds and determine our perception of the world. Cruse (2000), following Jackendoff, defines conceptual structure by arguing that since the brain is a finite physical object, it cannot store an infinite number of forms mapped onto an infinite number of concepts; thus, just as the formal side of language solves the problem of infinity by providing a set of units with recursive rules of combination, similarly there must be primitives and formation rules.

2.4.2. How does the theory of meaning components work?

We have seen above that the kind of analysis that uses a list of identified meaning components —also called semantic primitives or semantic components— to define a word is often called componential analysis.

If we study the lexical relations that seem to be implicit in sets of words like the following:

man-woman-child

dog-bitch-puppy

stallion-mare-foal

ram-ewe-lamb

bull-cow-calf

hog-sow-piglet

we see that there are a number of features whose presence or absence seem to define each word. As Saeed (2001:231) says, some semanticists have hypothesized that words are not the smallest semantic units but are built up of even smaller components of meaning which are combined differently (or lexicallized) to form different words.

Thus, words like *woman, bachelor, spinster* and *wife* have been viewed as made up of elements such as [adult],[human], [married] etc., as in the following table:

woman	[FEMALE]	[ADULT]	[HUMAN]	
bachelor	[MALE]	[ADULT]	[HUMAN]	[UNMARRIED]
spinster	[FEMALE]	[ADULT]	[HUMAN]	[UNMARRIED]
wife	[FEMALE]	[ADULT]	[HUMAN]	[MARRIED]

The elements in square brackets are called semantic components or semantic primitives and they cannot be broken down further.

According to Saeed there are three important reasons for studying such components. Firstly, they may allow an economic characterization of lexical relations such as contradiction or entailment. Secondly, by recognizing these relations can we accurately describe a range of syntactic and morphological processes. And, finally, as some semanticists (Jackendoff) claim, such primitives form part of our psychological architecture and they provide us with a unique view of conceptual structure.

Lexical relations can also be viewed from the perspective of componential analysis, and typical semantic relations such as hyponymy or incompatibility can also be understood as a set of features. Such a set of features can be organized in this format so that automatic processing may be more feasible.

Take hyponymy, for example,

woman	[FEMALE]	[ADULT]	[HUMAN]	
spinster	[FEMALE]	[ADULT]	[HUMAN]	[UNMARRIED]

and compare the sets of components. Hyponymy, then, can be defined in the following terms:

A lexical item P (*spinster*) can be defined as a hyponym of Q *(woman*) if all the features of Q are contained in the feature specification of P. That is, in the same fashion, the words , *bachelor, spinster, wife* are incompatible among them because *bachelor, spinster* differ in one feature (male / female) and *spinster, wife* differ in another feature (married / unmarried).

Componential analysis can also make use of binary feature specification and of redundancy rules in order to facilitate processing. The previous chart can be specified in the following way:

woman	[+FEMALE]	[+ADULT]	[+HUMAN]	
bachelor	[+MALE]	[+ADULT]	[+HUMAN]	[-MARRIED]
spinster	[+FEMALE]	[+ADULT]	[+HUMAN]	[-MARRIED]
wife	[+FEMALE]	[+ADULT]	[+HUMAN]	[+MARRIED]

This allows a characterization of antonyms by a difference of the value plus or minus a feature and so it is a more economical format and better adapted for computer processing.

In the same fashion the statement of semantic components is also more economical if we include some redundancy rules which predict the automatic relationship between components. The following list shows an example of this rule:

HUMAN> ANIMATE

ADULT > ANIMATE

ANIMATE > CONCRETE

MARRIED> ADULT

etc.

If we state these rules once for the whole dictionary, we can avoid repeating the component on the right of a rule in each of the entries containing the component on the left: so every time we enter [HUMAN], we don't have to enter [ANIMATE].

The concept of selection restrictions

This concept, also termed as selectional restrictions, has to do with the fact that arguments in the argument structure can take different semantic roles and thus affect the semantic features of a word in a string of words which hold a syntagmatic relation among them. These semantic roles in turn affect the subsequent syntactic cases that a lexical item can take in a sentence. That is there must be some kind of semantic compatibility among the words in a sentence.

For example, the verb *charge*, when it has the meaning of [indict], requires a sentient object and the noun *crime* as the oblique object, whereas *charge* meaning [electrify], requires an electrical device as object and a form of energy as oblique object.

2.5. CONCEPTUAL TOOLS

Dealing with conceptualisation is something that needs to be approached from a working perspective, that is from a methodological perspective. This implies defining units of analysis and the basic types of operations that relate them. From this perspective, the units of analysis

would be our working materials and the conceptual operations would be our instruments of analysis, our conceptual tools. Some of these operations include conceptualization, lexicalization, grammaticalization and the important concept of argument structure.

Conceptualization

Classical and prototypical approaches to the definition of concepts constitute alternative views on categorization. The classical view describes word meaning as a set of criterial properties or features. According to this theory, categories have clear boundaries as membership is limited to those entities possessing the conjunction of necessary and sufficient features particular to the category in question. Within the category itself, all members have equal status.

In contrast, prototype theory holds that the meaning of a word should be described in terms of the ideal example of a category. Such prototypes serve as cognitive reference points, so membership within a category is graded. In other words, the classical approach to conceptualization implies sharp, fixed boundaries, whereas boundaries in prototype theory are less clearly marked. However, as the extensively quoted work of Berlin and Kay (1969) showed when they studied colour categories, boundaries of natural categories are fuzzy and contextually flexible. In lesson 9, the issue of both classical and prototypical categorization is also dealt with.

2.5.1. Linguistic codification: lexicalization and grammaticalization

Lexicalization means 'putting a concept into a single word'. For example the English term "bake" means "to cook by using dry heat in an oven" and it had no European Spanish equivalent. However, it is lexicalized as "hornear" in Latin American Spanish.

Similarly, the concept of "the brother of my husband/wife" is fully lexicalized in Spanish as "cuñado" and it is only partially lexicalized in English as "brother-in-law".

Grammaticalization is the process by which a certain feature is morphologically and/or syntactically present in a term. For example, in Arabic there is a specific ending for a dual plural. In Spanish and French the treatment of respect (hablar "de usted" or parler "de vous") is

grammaticalized. By constrast, the Spanish difference between "ten/tenga" is not grammaticalized in English.

Both lexicalization and grammaticalization are different processes of linguistic codification. For example, naming a certain new flavour among experienced cooks involves lexicalization; that is coining a new term to codify a new experience. Codifying grammatical features means labelling morphological aspects when describing, for example, a process of verbalization of nouns when referring to actions after certain instruments. This is the case of the –ing ending to describe activities (trek > treking).

2.5.2. Argument structure

There are a number of concepts which are methodologically important. Among them we have the basic difference between arguments and predicates.

The concept of predicate structure or argument structure, also called *theta grid* by some authors, is a basic concept studied in logic, but absolutely essential in the understanding of semantics.

All elements in the world around us can be ontologically understood as either entities or relations. In most languages entities are codified as nouns. A predicate is a relation that links one or more entities. Thus a verb or an adjective can be understood as a predicate linking a number of entities. These entities can also be considered just as "places" or "slots" in relation with a function and, following a logical notation, are called *arguments* of such a function. For example,

They shared a secret

is a sentence whose argument structure is

$fx(a,b)$

That is, the function (share) has two arguments (they, secret). Another way of putting it is to say that *share* is a two place predicate.

While an argument designates some entity or group of entities, a predicate attributes some property or relation to the entities denoted by the arguments if there is more than one.

Another term for what is "inside" each slot is thematic roles which will be studied in lesson 8. This concept is different from the "argument" in the argument structure in the sense that these thematic roles, also called semantic cases (agent, patient, object, etc), are linguistically realized

whereas an argument in an argument structure is a logical concept. These semantic cases in turn, although related to, are also different from the usual syntactic cases (subject, object, etc.). As we'll see later on, it all comes down to a question of levels of abstraction in linguistic description.

SUGGESTED READINGS

— For the classical approach to categorization and for the theory of prototypes see Saeed (2003: 37-38) and Cruse (2000: 130-140; 2004: 132-137)).

— For a very well explained description of componential analysis as proposed by Jackendoff and Levin, see Saeed (2001: 21-267) (2003: 247-261), where their contribution to semantics is explained and some criticism of componential analysis is included following Jackendoff's own counterarguments.

ACTIVITIES AND EXERCISES

1. In each of the following sentences, pick out the expression which denotes a relation and specify the entities that are involved in them. Describe also what roles are required for each relation.
   a) My mother has bought a book
   b) John gave Mary a present
   c) She borrowed a book from the library
   d) Jack is taller than Mary
2. Translate the following predicate-argument structures into English.
   a) tall (John)
   b) lend (John, a book, Mary)
   c) send (the company, John, Japan)
3. Now translate the following sentences into predicate-argument notation
   a) She is beautiful
   b) Mary is taller than her sister
   c) John gave Mary a book
   d) Mary gave John a book

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Lesson 3

Semantics and related disciplines I

3.1. Semantics and logic.

- 3.1.1. Logic in semantic analysis.
- 3.1.2. Logic and the notion of truth. The concept of truth and its consequences.
- 3.1.3. A logical metalanguage.
- 3.1.4. Logical relations. Logical connectors: *and, or, if*.
- 3.1.5. Connectives and propositional logic.
- 3.1.6. Logical types of sentences: analytical, paradoxical and synthetic sentences.
- 3.1.7. Logical relations beween sentences: entailment, equivalence, contrariety, contradiction, independence, presupposition.
- 3.1.8. Intensionality.
- 3.1.9. Representing negative and compound sentences.
- 3.1.10. Quantification.
- 3.1.11. Introduction to predicate logic

3.2. Semantics and Artificial Intelligence.

- 3.2.1. Frames
- 3.2.2. Scripts

Suggested reading for lesson 3.

Annotated references.

Activities and exercises.

Objetives:

— To understand the logical bases of linguistic organization

— To establish some links between the logical bases of linguistic organization and computational language processing.

3.1. SEMANTICS AND LOGIC

3.1.1. Logic in semantic analysis

Logic is usually a very unpopular subject among humanities students. This is due partly to its highly formalized nature. However the understanding of the bases of logic is very helpful for the understanding of practical developments, such as how computers work. This is because the software that computers use in their programming is based on logic. In this lesson, we will only study how logic can help us to formalize sentences, that is information. Later these formalized sentences, turned into algorithms, will be converted into long chains of computational *bits,* which constitutes the basis of language processing.

The semantic relations that hold between sentences in the language are sometimes the result of using particular words such as connectors. In other cases the relations that hold between sentences are the result of their syntactic structure. Trying to represent these relations takes us to logic. That is, there is an approach to semantic analysis based on the notion of truth, which comes directly from the field of logic.

The conceptual tools used in logic include propositional calculus and predicate calculus. These are also called propositional logic and predicate logic. Another useful tool used in logical analysis is the construction of truth tables. In this lesson we will study some of the most basic and important concepts used in logic in relation to semantic analysis and artificial intelligence.

Although any approach to semantics can be formalized, the label of formal semantics usually refers to the approach that uses logic in semantic analysis. A number of issues are usually dealt with in this area. In the first place, the differentiation between sense and reference as proposed by Frege (1970 [1892]) constitutes an important distinction that he later elaborates in relation to the concept of truth. According to Frege the value

of a sentence is its truth value and its sense is what he calls *gedanke* or objective thought. Secondly, some scholars have supported the idea that the world can be better understood and, as a result, it can be better managed, thanks to the handling of senses which link the mental world and the real world. And finally, there are some problems affecting semantics in general. Such as how to deal with the problem of context or to what extent it affects meaning, which cannot be easily inserted into the framework of logic but needs nevertheless to be formalized one way or another in order to be more manageable.

In relation to the problem of the difference between sense and reference, there exist two groups of theories. If, for the so called representational theories semantic analysis involves discovering the conceptual structure which underlies language, for denotational approaches semantic analysis is seen from a different angle, that is, in connection with the notion of truth. For formal semantics based on denotational approaches meaning is arrived at from a communicative perspective. Since for formal semanticists a primary function of language is that it allows us to talk about the world around us, there must be a reliable link between the world around us and the language we use to talk about it. This link is based on the notion of truth.

When communicating with others and in our own internal reasoning, we use language to describe or model facts or situations. From this perspective, as has been claimed before, understanding the meaning of an utterance is being able to match it with the situation it describes. Thus, the search for meaning, from this perspective, is to discover how the symbols of a language relate to reality. In other words, meaning is given not by representations in the mind of the speaker and hearer but by the truth conditions by which the sentence is made true.

3.1.2. Logic and the notion of truth. The concept of truth and its consequences

In order to characterize such a relation, semanticists and logicians use a correspondence theory based on the idea of truth. Truth is defined as corresponding with facts or, alternatively, as a correct description of states of affairs in the world. Another way to put it is to say that the notion of empirical truth depends on a correlation to states of affairs in reality. In addition, philosophers and logicians have identified another kind of truth, which seems to be related to linguistic structure.

We can then distinguish between *a priori* and *a posteriori* truth. In an *a priori* truth, truth is known without previous experience. An *a posteriori* truth can only be known on the basis of experience. Along similar lines, still another definition of truth comes from Leibniz, who distinguished between necessary and contingent truth. Necessary truths cannot be denied without forcing a contradiction; contingent truths, on the other hand, can be contradicted depending on the facts.

The concepts of analytic and synthetic truth are of special importance in linguistics since these notions allow for the connection between language and reality. Analytic statements are those where truth follows from the meaning relations within the sentence, regardless of any relationship with the world, while a synthetic true statement is true because it accords with the facts of the world. For example, if it is raining and I say *"It's raining"*, this is a synthetic truth, whereas if I say *"John killed his wife and his wife is still alive",* this is analytically false.

The truth behaviour of sentences can also be affected by certain words like the connectors *and, or, if, then* and *not*. These are called logical words. Some sentences can be analytically true because of the behaviour of logical words (connectors, quantifiers) or because of the meaning of individual nouns or verbs. In each case, we know that the sentences are true without having to check any facts about the world.

For certain AI and/ or computational applications the possibility of handling elements of language in an automatic way, without constant checking with the real world, is considered an advantage rather than a problem.

3.1.3. A logical metalanguage

Following Montague's work and Saeed's summary of it, we can define a **model** as a formal structure representing linguistically relevant aspects of a situation. In such an approach, semantic analysis consists of three stages. Firstly, a translation from a natural language like English into a logical language whose syntax and semantics are explicitly defined. Secondly, the establishment of a mathematical model of the situations that the language describes. Thirdly, a set of procedures for checking the mapping between the expressions in the logical language and the modelled situations. These modelled situations represented by means of algorithms check whether these expressions are true or false of the situations referred to.

3.1.4. Logical relations. Logical connectors: *and, not, or, if*

When studying the semantic relations that may hold between sentences of a language, we see that sometimes these relations are the result of either individual words in a sentence or the result of a particular arrangement of words in a sentence (that is syntax). These relations can be represented and such a representation is based on the notion of truth. As we have seen, the notion of truth, in turn, has been developed out of the study of logic. Montague (1974) held that the tools of logic can help us to represent sentence meaning. The study of logic, that can be traced back to the Greeks, and especially to Aristotle, is still useful in checking the validity of argumentation and inference. In addition, a truth-based approach can help us characterize important semantic relations, such as the concepts of entailment and presupposition.

For example, note the following **syllogism** (also called *modus ponens* or a type of argument in three steps):

a. If Mary is not in the office, then she is in the house

b. Mary is not in the house

c. Mary is in the office

If steps a and b (called the **premises**) are true, then step c (the **conclusion**) is also guaranteed to be true.

A part of this study has to do with a concern for the truth of statements and whether truth is preserved or lost by putting sentences into different patterns. Truth in this case is taken to mean a correspondence with facts or a correct description of the state of affairs in the world. This truth is called **empirical** because we must have some access to the facts of the world to know whether the statement is true or not.

The **truth value** of a sentence is whether the sentence is true or not and the facts that would make the sentence true or false, its **truth conditions**.

When we have an English sentence like the one below, adding the word ***not*** will reverse its truth conditions:

a. Mary is in the office

b. Mary is not in the office

because if **a** is true, then **b** is false and if **a** is false then **b** is true.

The effects of negation can be represented in a table called the truth table, where the statements are represented by lower case letters such as

p, q, r, etc., and the negation by the symbol ¬ . T and F represent the values *true* and *false*. The table represents the effects of negation, as shown below:

p	¬ q
T	F
F	T

Other linguistic elements can also be studied in logic in a similar way.

3.1.5. Connectives and propositional logic

There are a number of **connectives** which have special importance in logic because they have a predictable effect on the truth conditions of compound statements. The study of these effects is called **propositional logic**. These connectives are the equivalents for ***not***, ***and, or, if.. then, if and only if***. In logic these connectives are important because they establish the validity of the argumentation and correct inductive reasoning.

not	¬
and	∧
or disjunction (inclusive or)	∨
or (exclusive or)	∨**e**
if….then	→
if and only if	≡

The connective ***and*** has its own truth value table and the resulting compound formed by using ***and*** can be predicted accordingly. The following table shows that only when both statements connected with ∧ are true is the constituent sentence true

p	q	p ∧ q
T	T	T
T	F	F
F	T	F
F	F	F

For example

a. The town of Bristol is flooded

b. The volunteers are on the way

c. The town of Bristol is flooded and the volunteers are on the way

The resulting statement is only true if both **p** and **q** are true.

The next connective in propositional logic corresponds to English ***or*** and it is called **disjunction (inclusive or)**. It is symbolized as $\vee$, and its truth table is as follows:

p	**q**	**p** $\vee$ **q**
T	T	T
T	F	T
F	T	T
F	F	F

The connective corresponds to the use of English *or* in sentences like the following:

(a) I'll bring the food or the wine.

For example, sentence (a) is true if either *I'll bring the food* or *I'll bring the wine* is true, and it is false if both are false.

There is also a second type of disjunction and it is called **exclusive or**. It is symbolized as $\vee_e$, and its truth table is as follows:

p	**q**	**p** $\vee_e$ **q**
T	T	F
T	F	T
F	T	T
F	F	F

We can see that **p** $\vee_e$ **q is** only true if **just one** of the two members of the disjunction is true. The difference in the case of $\vee_c$ is that both **p** and **q** cannot be true at the same time.

The connective ***if ...then*** is also called **material implication**, it is symbolized as $\rightarrow$ and it corresponds to conditional sentences. The *if-clause* (the **p** clause) is called the **antecedent,** and the *then-clause* (the **q** clause) the **consequent**. The truth value of this connective is as follows:

p	q	p → q
T	T	T
T	F	F
F	T	T
F	F	T

3.1.6. Logical types of sentences: analytical, paradoxical and synthetic sentences

From the point of view of the truth value of sentences, we can classify them into three categories: analytical, paradoxical and synthetic sentences.

Analytical sentences

Analytic sentences are those which automatically express true propositions in any context by virtue of the meanings of their constituent words and their arrangement.

Bachelors are unmarried

My niece is a girl

The dead body is a corpse.

Paradoxical sentences

Paradoxical sentences automatically express false propositions.

Bachelors are married

My niece is a boy

The corpse is not a dead body

Synthetic sentences

A synthetically true statement is true because it accords with the facts of the world

The sun doesn't shine during the night.

3.1.7. Logical relations between sentences: entailment, equivalence, contrariety, contradiction, independence, presupposition

In this section we will study how to characterize certain semantic relations by borrowing from logic the notion of truth and by using the formalism of propositional logic. We will see, for example, the linguistic

importance of the relation of entailment in semantic analysis. Thus, from the formal point of view, we will also see how certain semantic relations such as entailment, synonymy, or contradiction can be characterized in terms of truth relations.

Entailment

We have seen how we are able to know whether a sentence is true or false in relation to another because of our knowledge of the language. Entailment is a semantic relation that has to do with this. Entailment is not an inference in the normal sense because our knowledge of the truth or falsity of a statement does not derive from our empirical knowledge of the world but from our knowledge of a particular language where the lexical relations between words hold.

The relation of entailment can be seen as a result of the linguist structure of a particular language. The source of entailment can be lexical or syntactic. In the example:

a) The terrorist was killed.

b) The terrorist died.

the source of entailment is clearly lexical. As the meaning components of *kill* include some of the meaning components of *die,* we can say that sentence a) implies sentence b).

Active and pasive versions of the same proposition entail each other.

The relation of hyponymy, which will be studied in lesson 5, is a relation of inclusion where the hyponym includes the meaning of a more general word. For example, *worm* and *snake* are hyponyms of *animal,* and *uncle* and *brother* are hyponyms of *man*. This is why hyponymy is a regular source for entailment between sentences.

Following the previous example, we can see that sentence a) below entails sentence b).

a) I can see the worm coming out of the apple.

b) I can see the animal coming out of the apple.

Equivalence

When two sentences express the same proposition we can say that they are equivalent. This relation can also be defined as mutual entailment. Another way to describe this relation is as paraphrasis. The following are examples of equivalence:

Peter killed the rabbit	The rabbit was killed by Peter
My friend is dead	My friend is not alive
Mary announced her promotion	Mary said she had been promoted

Contrariety

Contrary propositions may not be simultaneously true but they may be simultaneously false. For example, *"the house is green"* and *"the house is red"* are contrary propositions since the house may be yellow.

Contradiction

Contradictory propositions must have opposite truth values in every circumstance. These two sentences show contradictory propositions:

The rabbit is alive	The rabbit is dead

Presupposition

See the following examplee: sentence a) "The head surgeon in the hospital is woman" presuposes sentence b) "there is a head surgeon in the hospital".

How can we differenciate presupposition and entailment?

We will be following closely Saeed's discussion of the delimitation of presupposition in relation with entailment. As this author explains, presupposition is a relation which can be approached from either the point of view of semantics or pragmatics. In fact, it lies at the borderline of the division between the two disciplines. In some respects, presupposition is, in the same way as entailment, a fairly automatic relationship, which involves no reasoning and seems free of contextual effects. In other respects, presupposition seems sensitive to facts about the context of utterance.

As a result, approaches to presupposition arise from different ways of viewing language. If meaning is seen as an attribute of sentences rather than something constructed by the participants, then semantics consists of relating sentence-object to another sentence-object and to the world. But if meaning arises from the communication that individuals engage in when talking to each other, then presupposition is part of the packaging of an utterance. The first approach is semantic, while the second approach is pragmatic.

In relation to the truth value of sentences it is also important to remember at all levels that truth value is an attribute that applies to utterances and that the logical relations that apply to utterances are related to those that apply to sentences, but that they are not identical.

Differentiating entailment from presupposition can be done by negating both types of relations. Negating an entailment destroys the relation whereas negating a presupposition does not affect it. This fact proves that both types of relations could be formalized and thus manipulated. On the other hand, one important feature of presupposition is precisely that, being context-dependent, it can be blocked by our general knowledge of the world.

Entailment versus presuposition

There are similarities and differences between these two semantic relations. Entailment is a semantic relation with a strong logical background whereas presupposition, also a semantic relation, is much more related to the context in which the sentence appears.

p	**q**
It's a tiger	It's an animal
My friend killed the rabbit	The rabbit is dead
All roses are blue	My rose is blue

Lets see a few things about entailment first. For example, if we study the following table

The propositions in **p**, entail the propositions in **q**, because the truth of q follows logically and "inescapably" (Cruse dixit..!!) from the truth of **p**. And the falsity of **p** follows likewise from the falsity of **q**. That is if we negate **q,** we automatically negate **p**, (…but not the other way round!!).

Cruse explains how entailment should be distinguished from what logicians call material implication, as a form of entailment. A proposition **p** materially implies another proposition **q** if and only if (represented as **iff**), it is never the case that **p** is true and **q** is false. He also explains that it looks like a normal entailment but it is not. The crucial difference is that the definition of material implication makes no reference to the meaning of the proposition, merely to a relation between their truth values, whereas strict implication or semantic implication is essentially a relation between meanings as we see in the table above.

Cruse (2004) distinguishes two properties of entailment. The first property has to do with the context: entailment is context – independent because it depends only on the meanings of the constituent terms in the proposition. In his example, he asks us to consider the case where John

has in front of him a box of coloured disks, in which all the red disks are round in shape, and all green disks are square. Cruse discusses that in such circumstances, the truth of *John picked a squared disk from the box* follows inescapably from the truth of *John picked a green disk from the box* since all green disks are square. He argues that this relation of truth does not arise from relations between *green* and *square*, but from the above mentioned context: it would have been just as easy to have all the red disks square, and the green disks round. On the other hand, the relation between *It's a dog* and *It's an animal* is independent of any particular context.

The second property discussed by Cruse is that the truth of the entailed sentence must follow inescapably from the truth of the entailing sentence. It is not enough for it to be usually true, or even almost always true; it has to be unthinkable that it might be false. He discusses the following example considering the relation between

i (i) *It's a dog*

and

(ii) *It's a pet*

(iii) It can bark

Most dogs that most people encounter are pets, but there are such things as wild dogs, so the relationship is merely one of expectation. **This is not an entailment**. Likewise in the case of (iii), most dogs can bark, but a dog with a defective larynx does not thereby cease to be a dog, so the relationship is not logically necessary. He concludes saying that only logically, necessary, context-independent relationships count as entailment.

Saeed (2004) also discusses the concept of entailment from the point of view of truth relations and he explains how some semanticists claim that there are fixed truth relations between sentences that hold regardless of the empirical truth of the sentence. He illustraes and discusses the issue in the following examples:

(i) The anarchist assassinated the emperor

(ii) The emperor died

Where it can be said that if somebody tells us (i) and we believe it, then we know (ii) without being told any more. We can also say that it is impossible for somebody to assert (i) and deny (ii).

What all this means is that **entailment is not an inference in the normal sense**: we don't have to reason to get from (i) to (ii), we just know it instantaneously **because of our knowledge of the English language.**

Saeed also touches the problem of the different ways of approaching the issue of defining meaning and how this influences other problems such as the difference between entailment and presupposition. He takes two approaches to presupposition.

In the first approach, closely related to the philosophical tradition in the line of Frege, Russell, Wittgenstein etc, sentences are viewed as external objects where we don't worry too much about the process of producing them, or the individuality of the speaker or writer and their context or their audience. Meaning is seen as an attribute of sentences rather than something construed by the participants. Semantics, then consists of relating a sentence-object to other sentence-objects and to the world.

As above mentioned, another approach, also discussed by Saeed, views sentences as the utterances of individuals engaged in a communication act, where the aim is to identify the strategies that speakers and hearers use to communicate with one another. Then communication is seen from the speaker's viewpoint and we talk about presupposition as part of the task of packaging an utterance; or we adopt the listener's viewpoint and see presupposition as one of a number of inferences the listener might make on the basis of what the speaker has just said. Saeed then discusses the following example:

i(i) John's brother has just got back from Nigeria

(ii) John has a brother

and analyzes it as a truth relation in the following terms:

Step 1: if **p** (the presupposing sentence) is true then **q** (the presupposed sentence) is true

Step 2: if **p** is false, the **q** is still true

Step 3: if **q** is true, **p** could be either true or false

and produces a first truth table for presupposition

p		q
T	→	T
F	→	T
T or F	←	T

discussing the table as follows: If it is true that John's brother has just come back from Nigeria, it must be true that John has a brother. Similarly, if it is false that John's brother has come back from Nigeria (if he's still there, for example), the presupposition that John has a brother still holds.

Finally, if it is true that John has a brother, it doesn't tell us anything about whether he has come back from Nigeria or not; we just don't know.

Therefore, Saeed holds that viewing presupposition as a truth relation allows us to set up a truth table like the one above and this in turn **allows us to capture an important difference between entailment and presupposition.** If we negate an entailing sentence, then the entailment fails; but negating a presupposing sentence allows the presupposition to survive.

He compares the entailment in

a)

i(i) I saw my father today

(ii) I saw someone today

and the presupposition in:

b)

i(i) The major of Liverpool is in town today

(ii) There is a major of Liverpool

If we negate a (i) in *I didn't see my father today* it no longer entails *I saw someone today,* because I can still have seen somebody. As a result, there is no entailment between the two sentences.

However, if we negate b(i) as in *The major of Liverpool isn't in town today*, the presupposition still holds because there might be a major of Liverpool even if he's not in town.

3.1.8. Intensionality

There is a logical and an AI approach to this idea where both the concepts of intension and extension must be jointly understood.

As Kreidler (1998: 132) puts it

> The extension of a lexeme is the set of entities which it denotes. The extension of *dog* includes all collies, dalmatians, dachshunds, mongrels, etc., etc, that have ever lived or will ever live and every fictitious creature that is accepted as being a dog… The intension of any lexeme is the **set of properties** shared by all members of the extension. Thus everything that is denoted by *lake* must be a body of water of a certain size surrounded by land, and everything denoted by island is a body of land surrounded by water.

Because of this, extension can change while intension remains the same. All this has to do with the idea that meaning can be understood as

a set of features. It is also related to the concepts of sense and reference and to the concept of compositionality.

Carnap 1947, established that the extension of a sentence ists truth value, and its intension the proposition expressed by it.

Lyons (1995: 225), based on Montague semantic ideas and following Carnap, starts identifying Frege's distinction between reference *Bedeutung* and sense *Sinn* and goes on applying the extension / intension distinction to conclude that the sense or intension of a sentence is its propositional content, whereas its reference or extension, is its truth value.

Intensionality, used in formal conceptual analysis (Ganter and Wille 1999), is a technique or procedure to extract conceptual structures from a database. This procedure is based on the distinction between the extension of a concept (the set of all objects belonging to such concept) and its intension (all the shared features of the set of objects which make up the concept).

We will go no further here in the implications of these distinctions for AI and other computational linguistics applications apart from emphasizing its importance.

Another concept, homophone of the above one is intentionality. Intentionality, (written with a t) has to do with the idea of the codification of the intention of the speaker.

3.1.9. Representing negative and compound sentences

This type of notation can also reflect negative and compound sentences using the connectives shown on previous pages. We use capitals for predicates and lower case letters for arguments.

Peter doesn't jog:

$$\neg \text{ Jp}$$

My mother smokes pot and my son drinks wine:

$$\text{Smp} \wedge \text{Dsw}$$

If Bill drinks, Jenny gets angry:

$$\text{Db} \rightarrow \text{Aj}$$

Relative clauses can also be translated into this logical notation if we consider them as a kind of conjunction. To do this, we use the logical connector $\wedge$. Note the following examples where *"being something"* is represented by the capital letter of that *something*. Note also how tenses are not relevant in this kind of logical representation.

My friend, who is a millionaire, is a socialist:

$$Mf \wedge Sf$$

Yuko was a dog that didn't bark:

$$Dy \wedge \neg By$$

Jean admires Robert, who is a gangster:

$$Ajr \wedge Gr$$

3.1.10. Quantification

In the following example taken from Gregory (2000:44), Odysseus has told Polyphemus the Cyclop that his name is 'Nobody'. Polyphemus believes him but when he is attacked by Odysseus and calls for help from his neighbours he becomes frustrated.

'What's up Polyphemus? Who's hurting you?'.

'Nobody 's hurting me. Nobody has just gouged my eye out'.

'Well if nobody's hurting you, shut up and let us get some sleep'.

What is the essence of this misunderstanding? Gregory explains how the other Cyclops do not understand 'nobody' as referring to an individual as Polyphemus intends and questions what it refers to then. Since there are a number of words in English expressing the combination of people and things such as *everything, something, nothing, nobody;* but not *threething, manything* or *tenbody,* it is difficult to formalize this concept. Gregory approaches it by applying **set theory** to both kinds of terms and treating quantifiers as denoting a relation between the two sets.

Quantifiers limit the applicability of the predicate to the arguments. In classical logic we use only two types of quantifiers, the **existential quantifier** and the **universal quantifier**.

The **existential quantifier** is represented as ∃ and can be re-read as:

There exists at least one "x" such that 'x died

and can be represented in logical notation as:

$$\exists x \, (died(x))$$

This quantifier can be translated as ***someone*** or ***a***. In the following example

$$\exists x \, (sneezed\,(x) \wedge man(x)$$

we can re read it as

There exists at least one individual x such that x is a man and x sneezed

The **universal quantifier** is represented as ∀ and corresponds in ordinary language to ***all*** and ***every.*** For example,

horses are animals

can be translated as

∀x (horse (x) ∀ animal (x))

and can be read as:

for all x, such that x is a horse it entails x is an animal

3.1.11. Introduction to predicate logic

3.1.11.1. Arguments and predicates

As we have seen, the concept of predicate structure or argument structure, also called *theta grid* by some authors, is a basic concept studied in logic, but absolutely essential to the understanding of semantics.

We have seen how all elements in the world around us can be ontologically understood as either entities or relations. In most languages entities are codified as nouns. While an argument designates some entity or group of entities, a predicate attributes some property or relation to the entities denoted by the arguments if there is more than one. Thus a predicate is a relation that links one or more entities. Consequently, a verb or an adjective can be understood as a predicate linking a number of entities. We also studied earlier how these entities can also be considered just as "places" or "slots" in relation to a function and, following a logical notation, are called *arguments* of such a function. Another term for what is "inside" each slot is "thematic roles". For example:

She bought a new computer

is a sentence whose argument structure is *fx*(a,b). That is, the function (bought) has two arguments (she, a new computer). Another way of putting it is to say that *bought* is a two place predicate. While an argument designates some entity or group of entities, a predicate attributes some property or relation to the entities denoted by the arguments if there is more than one.

The relation between arguments, thematic-roles and grammatical cases, is briefly introduced, basically with the purpose of clarifying and making explicit the connections between these concepts. This includes understanding the implicational hierarchy as proposed by Fillmore (1968) and Givón (1984) and also understanding the idea that thematic roles are closely linked to the meaning of the verb; or, what is not very different, that the characteristics of the state of affairs depicted by a verb are captured in all languages although the way this relation is lexicalized and/or grammaticalized in different languages varies in a number of ways.

Even if the dialectic relation between meaning and the way it is lexicalized and grammaticalized is different at each level within each language, the argument structure is more permanent across languages than the way a state of affairs in a particular language has lexicalized and/or grammaticalized —and thus highlighted— a particular role. As previously explained, the concept of thematic-role is semantic whereas the concep of grammatical case is syntactic.

In formal semantics, a kind of notation that represents the predicate (both the relation or attributed propriety) and the entities that take part in such a relation or that hold that propriety is represented by following certain conventional patterns. The formalism is very simple: capital letters are used to represent the predicate and lower case letters to represent the arguments of the predicate. We can also use **variables**, represented by the lower case letters from the end of the alphabet (w, x, y, z), if we want to leave the identity of the subjects unspecified. There is an advantage in using variables instead of lower case letters and it is that the skeletal characteristic of the predicate structure is more clearly represented if arguments are taken to be slots in the predicate structure rather than iconic representations. This is also an advantage in the analysis of quantifiers, as we have seen.

It is a convention in predicate logic that the formula begins with the predicate, followed by the individual constant. For example, the following simple statements can be represented as:

Mary is worried	Wm
Robert smokes	Sr

Mary is worried	**Wx**
Robert smokes	**Sy**

Two place predicates can be represented as follows:

John resembles Peter: *Rjp*

Pete is crazier than Ryan: *Cpr*

3.1.11.2. Order of elements in predicate logic

The order of constant terms after the predicates is significant. Not only does it mirror the English sentence structure, but also the most basic logical sequence of facts.

The following example shows how the order of elements is important and should be represented:

Fatima prefers Bill to Henry: *Pfbh*

The bank took the money from Liza: Tbml

3.1.11.3. More about predicates and arguments

Thematic-roles and participant roles are the most frequent names given to what is inside the slots in the predicate structure. We will explain in Lesson 7 how some linguists see the relationship between a certain state of affairs and the participant roles that they define.

It is important to understand the definition of semantic roles and state of affairs as semantic analysis instruments. Because of this, one important pattern in the codification of meaning is usually the codification of the state of affairs as a whole and/or the codification of the arguments in such a state of affairs.

3.2. SEMANTICS AND ARTIFICIAL INTELLIGENCE

Knowledge representation

Artificial Intelligence as a field takes for granted the existence of speech recognition mechanisms and the existence of parsers or mechanisms for analyzing the syntax of sentences and it is engaged in the search for models for representing meaning. Obviously such representations depend to a large extent on how meaning is defined. Semantics, as a field of linguistics, sometimes overlaps with and borders related disciplines, such as pragmatics or artificial intelligence.

Meaning is related to world knowledge and to language-specific knowledge. Meaning in artificial intelligence (AI) includes a formal perspective, a cognitive perspective and ways of having these represented in the mind. The suggested formal representation proposed for language and knowledge of the world should, in principle, be computer processable. Thus, part of the challenge of building such a system lies in integrating many different types of knowledge (syntactic knowledge, semantic knowledge, and knowledge of the domain of discourse) and using them effectively in language processing. Thus the field of AI is closely linked to knowledge representation.

According to Faber and Mairal (1999), if cognitive sciences try to explain both the way humans think and the way computers work, the purpose of natural language processing (NLP) is the automatization of linguistic operations, such as language comprehension, production, and acquisition, all of which imply extensive use of vocabulary and world knowledge. The ultimate goal in NLP is the development of a totally explicit theory of language processing.

3.2.1. Semantic networks, mental models, frames and scripts

Possible ways of approaching the representation and organization of knowledge in the mind include semantic networks, mental models, frames and scripts. Semantic networks, as initially proposed by Quillian, Seltz, and others, were developed by Johnson-Laird (1983). They are based on psychological research and constitute the most popular basis for computational and psychological theories of meaning. Because the meanings of words are represented by labelled associations from one word to another in a network of links, a semantic network is an associative theory framed for a computer. This network includes hierarchized information. Network theories have also been influenced by componential theories of meaning, as proposed by Katz and Fodor.

Mental models assume that what an assertion refers to is not a truth value but a state of affairs that would render the assertion true. Thus, there is a distinction to be drawn between the state of affairs an assertion refers to, a mental representation of that state, and the truth value of the assertion. Perception yields rich mental models of the world; inference depends on the manipulation of the mental models and comprehension is a process of constructing mental models.

The real task for mental models is to show how language relates to the world through the agency of the mind. According to Johnson-Laird (1983),

semantic networks, semantic decomposition, and meaning postulates are not sufficient for this task because they give no account of truth conditions. But the theory of mental models establishes the required relation: you can construct models of the world on the basis of discourse and compare such models with others constructed by other means: from perception, from memory, from imagination, etc.

An utterance is true with respect to perception, memory etc., if its truth conditions are satisfied within the model derived from those sources. A mental model represents the reference of a sentence (the particular state of affairs to which the sentence refers) because the model can be revised as a result of subsequent information and it functions as a representative sample from the set of all possible models that might be constructed from the initial linguistic representation of the sentence. Hence, this linguistic representation captures the truth conditions or sense of the sentence. For example, certain abstract relations such as the concept of ownership do not correspond to anything in the physical situation, though they depend for their existence on the occurrence of certain physical events. Abstract relations try to show how knowledge of truth conditions is used to construct representations.

The sentence *John owns the house* has two very real referents, *John* and the *house* but their relation of ownership is such that it needs some kind of material realization (a verbal agreement or a verbal statement in the form of a declarative speech act or a written document, in the form of the deeds of the house, etc) for its abstract nature to become real enough to affect the implied entities. These relations can be represented by using a mental model.

The methodology of AI provides a unique vantage point from which to deal with questions such as the nature of knowledge and how it is used. The AI researcher tries to program a computer so that it can understand and interact with the world and, in order to do this, the best way to approach the problem of building an intelligent machine is to emulate human cognition.

Thus the goals of cognitive sciences and the goals of AI converge in trying to understand what knowledge looks like and how it is used or, to put it in AI terms, which data structures are useful for representing knowledge and which algorithms operate on those knowledge structures to produce intelligent behaviour.

Schank and Abelson (1977) started to build up language-free representation models of how humans represent information communicated by natural languages that could also be used as the basis of intelligent

language understanding programs. They soon realized that in order to understand natural language with anything like human levels of ability, it would be necessary to simulate human cognitive abilities such as problem solving and learning, which, on the surface, had little to do with language understanding but in fact had everything to do with it. As a result, they took into account two straightforward propositions. First, that the function of language is to communicate concepts between people and, second, that in order to understand language one must be prepared to understand the underlying concepts represented by that language. This is the link between AI and semantics.

After developing a conceptual dependency theory (CD), Schank and other scholars felt the need to include inference mechanisms in their models. Natural language users presuppose that speaker and hearer share a common frame of reference, expressed in the large amount of knowledge they share about the way the world works. These authors developed a program to do this. Although its parser used top-down predictions to process individual sentences, it was quite bottom-up above the sentence level. The inferencer dealt with each separate sentence in isolation and made little use of context to understand the story to be processed. The reason for such behaviour was that the program was based on CD theory, which was a theory of representing the meaning of sentences, not of texts. A more top-down theory of understanding was needed. Thus a Script model was developed.

3.2.2. Scripts

A script is a pre-packaged inference chain which relates to a specific routine situation. That is to say, it is a sequence of conceptualizations with some variables. Specification inferences are much easier with script-based processing. They also help the program to infer what unstated actions took place to be useful for language generation since they provide structure to a series of events, distinguishing constant features from those that vary. They are also an efficient way to store episodes in long term memory because rather than storing the entire episode one only needs to record it as an instance of a particular script with a certain set of variable bindings. Scripts provide a way to package one's domain specific knowledge and make it readily available for processing stereotyped events. A classical example is a restaurant script where the sitting, taking the order and sequence of dishes follow a fixed pattern.

An interesting point which is also central to AI is the possibility of providing background knowledge to computers. As Saeed (2001: 186)

recognizes, the importance of background knowledge to language understanding was quickly acknowledged in the field of artificial intelligence, where one typical application is the design of computer programs to process and store information from texts such as newspapers so that users can later consult the databases.

To sum up, the development of computational linguistics has been helped by the organization of semantic information; it has moved forward by considering the lexicon as a thesaurus rather than as a dictionary.

Large corpora can provide examples for linguistic analysis that the linguist is likely to miss. In addition, because judgements of acceptability are often too subtle for intuitions to be reliable, corpora can provide speech data on what utterances actually occur. As a result, computational linguistics allows for the analysis of hundreds of semantic, syntactic, and collocational features.

SUGGESTED READINGS

— For a revision of how the different levels of abstraction which underlies the difference among utterances, sentences, and propositions affect logical matters, see again Saeed (2001; 2003: 13-15). See also Cruse (2000: 22-28; 2004: 19-25).

— For the predicate-argument distinction, see Cruse (2000: 19-21; 2004: 23-25) and Saeed (2001: 139-171; 2003: 148-180).

— For truth conditions, logical connectors, truth tables, and analytic and synthetic statements, see Saeed (2001: 79-105; 2003: 94-95; 2003: 292-309).

— For logical relations between sentences, see the introduction by Cruse (2000: 28) and Saeed (2001: 90-93; 2003: 98-102) where entailment is explained and related to synonymy.

— For a *theta- role* oriented version of participant roles in relation to grammatical relations, see Saeed (2001: 140-171; 2003: 148-180).

— For an study of quantifiers, see Saeed (2003: 308-309; 312-316) and Cruse (2000: 291).

— For the concept of intension and other related concept see Lyons (1995: 91-92; 225-233) and Kreidler (1998: 132).

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ALLWOOD, J., ANDERSSON, L. G., DAHL, O. 1977. *Logic in Linguistics*. Cambridge: Cambridge University Press.

This is a classic text in formal semantics. All basics in the area are explained starting from set theory, inference, logical analysis of sentences, and propositional logic. In addition, the deductive methodology is explained. Modal logic, intensional logic, and further extensions related to predicate logic constitute other important parts of the book.

BENNET, P. 2002. *Semantics: An Introduction to Non-Lexical Aspects of Meaning*. München: Lincom Europa.

The author himself has provided a very good summary of his work, which is available from http://home.t-online.de/home/LINCOM.EUROPA/6911.htm.

This is an intermediate level textbook on semantics. In the introduction, the author deals with some background notions such as grammaticalization and prototype theory. Other chapters in the book include the following topics: links between syntactic and semantic categories, proposition types, deixis, tense, aspect, modality, negation, and determination.

CHIERCHIA, G. and MCCONNELL-GINET, S. 2000. *Meaning and Grammar: An Introduction to Semantics*. Cambridge, Massachusetts: MIT Press.

This is a generativist oriented handout on semantics which also focuses on some of the main procedures in formal semantics.

JACKENDOFF, R. 1997. *The Architecture of the Language Faculty*. Cambridge, Massachusetts, London: The MIT Press.

The author backs Chomsky's innateness position in relation to universal grammar (UG). He says that since UG provides the basis for learning, it cannot itself be learned. It therefore must be present in the brain prior to language acquisition. The only way it can get into the brain is by virtue of genetic inheritance. That is to say, UG is innate. The human genome specifies the growth of the brain in such a way that UG is an emergent property of the neural wiring. In relation to the differences and links between conceptual structure and linguistic structure, he says that whatever we know about the conceptual structure is not built out of nouns, verbs, and adjectives. Its units are such entities as conceptualised physical objects, events, properties, times, quantities, and intentions. These entities are assumed to interact in a formal system that mirrors in certain aspects the hierarchical structure of syntax. Then, where syntax has structural relations such as head-to-complement, head-to-specifier, or head-to-adjunct, conceptual structure

has structural relations such as predicate-to-argument, category-to-modifier, or quantifier-to-bound variable. Thus, although conceptual structure constitutes a syntax in the generic sense, its units are not NP (noun phrase), VP (verb phrase), and so on. Unlike syntactic and phonological structures, conceptual structures are purely relational in the sense that linear order plays no role. Conceptual structure must provide a basis for rules of inference and the interaction of language with world knowledge.

RAMOS, A., TUTIN, A., LAPALME, G. 1994. Lexical Functions of Explanatory Combinatorial Dictionary for Lexicalization in Text Generation. In P. St-Dizier and Viegas, E. (eds.). *Computational Lexical Semantics*. Cambridge, NY: CUP.

The authors apply Mel'cuk's framework to natural language generation. They show that the problem of lexicalization cannot really be correctly carried out without making reference to the lexicon, that takes into account the diversity of the lexico-semantic relations. This approach views lexicalization both as a local process and as a more global one, taking into account the contextual effects of certain lexicalization in relation to another in a sentence or a text. Paradigmatic lexical functions are shown to be well adapted to treat lexicalization in the context of a text, whereas syntagmatic relations operate at the sentence and proposition levels.

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EXERCISES

1. The statement:

   Under normal conditions if one heats water up to 100 degrees Celsius, water becomes vapour is

a) an analytic truth
b) synthetic truth
c) necessary truth
d) contradiction

2. Why do we know that the statement *"She died yesterday but she is still alive"* is false?
   a) because it is an analytic statement
   b) because it is an synthetic statement
   c) because it is an empirical fact
   d) because we know her
3. Translate the following predicate-argument structures into English
   a) tall (John)
   b) lend (John, a book, Mary)
   c) send (the company, John, Japan)
4. Now translate the following sentences into predicate-argument notation.
   a) She is beautiful
   b) Mary is taller than her sister
   c) John gave Mary a book
   d) Mary gave John a book
5. Rewrite the following as predicate-argument formulae using quantifiers
   a) Everybody is sad
   b) Somebody is sneezing
   c) Nobody is crying
   d) Nobody likes María

Lesson 4

Semantics and related disciplines II. Semantics and Pragmatics

4. Semantics and Pragmatics.
    4.1 Deixis.
    4.2. Extensions of spatial deixis.
    4.3. Person deixis.
    4.4. Social deixis.
    4.5. Meaning and context.
    4.6. Information structure.
    4.7. Focus and topic.
    4.8. Reference and context.
    4.9. Inference.
    4.10. Conversational implicature.
    4.11. Relevance theory.
    4.12. Speech acts.
    4.13. Summary.

Suggested readings for lesson 4.

Exercises and activities.

References.

Objetives:

— To understand the role of context in the codification of meaning.

— To understand the interconnections between these two disciplines.

SEMANTICS AND PRAGMATICS

As was said in lesson 1, there is a subtle dividing line between semantics and pragmatics. Where semantics, for most authors, deals with those aspects of meaning which do not vary from context to context, pragmatics deals with aspects of individual usage and context-dependent meaning. In other words, as Saeed puts it, while both areas of study are concerned with meaning, semantics, is the study of conventional, linguistic meaning, and pragmatics is the study of how we use this linguistic knowledge in context. In this view, pragmatics is the study of how hearers, for example, have to combine semantic knowledge with other types of knowledge and make inferences in order to interpret the speaker's meaning.

In a conventional view of meaning, sentences are regarded as external objects where one does not worry too much about the process of producing them or about the individuality of the speaker or writer or their audience. Consequently, meaning is seen as an attribute of sentences rather than something constructed by the participants. Semantics consists of relating sentence-objects to other sentence-objects and to the world. This perspective is adopted when sentence relations are characterized in terms of truth relations. However, when sentences are viewed as utterances of individuals engaged in communication, a pragmatic approach is assumed. In this lesson we will see how non-linguistic knowledge affects the understanding of utterances.

From this perspective, too, meaning should be considered as a text-sensitive element in which two main factors are especially relevant: deixis and information structure.

4.1. DEIXIS

Deixis and information structure have been selected as important reference points which connect reality, the way we perceive it, and the

way we name it. According to Saeed (2001: 173), deixis *commits a speaker to set up a frame of reference around herself*. Pronominal systems are good examples of deixis. In the case of background knowledge the important thing is that both the implication and inference relations often rely on a kind of cultural knowledge that cannot be found in any dictionary entry.

All languages mark some kind of division of space around the speaker and some kind of division of time in relation to the act of speaking. The most common resource to do this is by using pronouns. Pronouns can be seen as a shorthand naming system for participants involved in the talk which can be identified as a universal linguistic feature.

The simplest example of spatial deixis in English is adverbs of location (when used deictically) since they pick out places according to their proximity to the location of the speaker.

*It's too dangerous to pull up **here** just round the bend. Try and park **there**, by the trees.*

We see then that, if the speaker moves, the interpretation of the adverbs will change:

*I'm glad we moved **here**, it was just too dangerous to park up **there** with all those cars coming so fast…*

Spanish contrasts with English having a three-term opposition system based on proximity in relation to the speaker:

Aquí / ahí / allí

Demostratives operate in a very similar way. For example, Spanish again has a three-term opposition:

esto / eso / aquello

whereas English has a two-term opposition

this / that

Certain languages mark proximity together with other information about the addressee such as, for example, whether the referent is actually seen by the speaker.

There are other languages with a more complex division of space including locations in space above, below and on the same level as the speaker. For example, there are languages whose demonstrative system lexicalizes large expanses of water, or objects that are long or moving (Seed, 2003:184).

According to Saeed, languages vary in the type of semantic information that is obligatorily included in deictic terms, that is, the type of information that is grammaticalized. For example, Arabic obligatorily includes information about the gender of the addressee if you to refer to one single person:

'anta' = 'you' (masculine, singular)

'anti' = 'you' (feminine, singular)

And they have their corresponding verb forms. There is no 'you' pronoun which does not include gender specification.

Various European languages (French, Spanish, German, etc.) codify the degree of formality or the degree of respect that the speaker assumes in relation to the addressee such as speaking *'de vous'* in French, or *'hablar de usted'* in Spanish.

4.2. EXTENSIONS OF SPATIAL DEIXIS

In many languages, spatial deixis terms such as demonstratives are also used to refer to time. Both English and Spanish show this:

That year was much less drier than this one is

Ese año fué mucho menos seco que éste

This transference is frequently described in terms of a metaphorical shift from the more concrete domain of physical space to the much more abstract concept of time. Saeed gives the example of how notions like possession and states are expressed spatially, as in Irish(examples taken from Saeed, 2003):

(1) *Tá Porsche agam.*
is Porsche at.me
'I have a Porsche'

In this example possession is expressed spatially:

(2) *Tá slaghdán orm*
Is cold on.me
'I have a cold'

where physical state is also expressed in terms of space location.

4.3. PERSON DEIXIS

Saeed also explains how there is a further deictic system that grammaticalizes the roles of participants, such as the current speaker, the addressee and other participants. This information is grammaticalized by pronouns in English and in many other languages such as Spanish. Prototypically, the first person singular is used for the speaker, the second person for addressee or addressees and at least a third person for 'neither-speaker - nor - addressee'. This is the most common pattern in European languages, but there are other languages such as Spanish that grammaticalize the gender of plural addressee (vosotros/vosotras) or the plural of 'neither - speaker - nor - addressee' (ellos/ellas). Arabic, for example, has a dual pronoun that codifies "exactly two" and that also grammaticalizes gender. Other languages apply the notion of plurality in first person singular depending on whether it includes the speaker.

These differences can also be illustrated when comparing the codification of possession in both English and Spanish. In English, possession and gender are codified together in the word referring to owner as in.

His / Her car contrasting with:

Su coche (both genders)

this difference does not exist in Spanish

In Spanish, possessive adjectives and gender are codified together as in:

Esta casa es ***mía*** / *Este coche es* ***mío***

where ownership is codified in the element possessed and not in the owner of the thing in question. One possible explanation for this is the nearly deictic characteristics of the English possessive system.

4.4. SOCIAL DEIXIS

The pronoun systems of many languages also include information about the social identity and/or status of participants in a conversation. In English the codification of the treatment of respect is not grammaticalized. That is, the treatment of respect that is frequent in many European languages, such as the Spanish difference between *tú/usted*, the French difference between *tu/vous* or the German *du/Sie* difference does not exist in English. This difference is even more marked in languages such as in Japanese where you cannot address a third person without codifying at the same

time whether you are above, below or at equal social status in relation to the addressee. For example, women addressing their husbands need a pronoun marking that the husband is socially above the wife.

However, there are also non-grammaticalized ways of expressing either social distance or respect in English. The most common one is by addressing people not by their first names, but using Mr / Mrs / Miss before their surnames.

4.5. MEANING AND CONTEXT

We have seen how speakers involved in a conversation calculate the retrievability of the information available at each point of the verbal interchange. Saeed explains how these calculations of retrievability are really guesses about knowledge. A speaker choosing how to make reference to an entity calculates what his hearers know. Saeed establishes three sources of knowledge a speaker has to estimate.

1. Knowledge computable from physical context.
2. Knowledge that is available from what has already been said.
3. Knowledge available from background or common knowledge.

The first includes the kind of knowledge obtained by filling in deictic expressions. We have already studied that in previous sections. The type of knowledge available from what has already been said is what can be viewed as the talk itself. This is often called **discourse** understood as some kind of context.

Participants in fragments like:

Who typed this bullshit?

Joseph did

Or,

I'm exhausted

Me too

would have no difficulty interpreting *Joseph did* as *Joseph typed this bullshit* and *Me too* as *I'm exhausted, too*. The preceding discourse allows these interpretations.

Another element in the role of discourse is the discourse topic. Note the following examples taken from Saeed. The first presents Rocky as a prisoner and the second presents him as a wrestler. Each title leads to a

different interpretation.

A Prisoner Plans His Escape

*Rocky slowly got up from the mat, planning his escape. He hesitated a moment and thought. Things were not going well. What bothered him was being held, especially since the **charge** against him had been weak. He considered his present situation. The lock that held him was strong, but he thought that he could break it.*

A wrestler in a tight corner

*Rocky slowly got up from the mat, planning his escape. He hesitated a moment and thought. Things were not going well. What bothered him was being held, especially since the **charge** against him had been weak. He considered his present situation. The lock that held him was strong, but he thought that he could break it.*

The word ***charge*** has a different meaning under each title. Listeners add their own inferences when they interpret utterances, filling in the material in different ways depending on the knowledge provided by the discourse topic.

Background knowledge understood as cultural knowledge also affects the interpretation of the following examples, also from Saeed:

1. a) I'm hungry
   b) I'll lend you some money
2. a) Shall we go and get some ice cream?
   b) I'm on a diet
3. a) Come over next week for lunch
   b) It's Ramadan

In **1,** the fact that food can be exchanged for money is a kind of cultural knowledge that is not present in any dictionary entry for the words *food* or *money*. Likewise, speaker a) in **2** will take the **b** answer as a negative based on cultural knowledge about ice creams and diets. Again in **3,** if **a** and **b** are Muslims, then **a** will probably infer that b's reply is 'no'.

4.6. INFORMATION STRUCTURE

We have seen how different types of knowledge contribute to the understanding of utterances by providing background information. In this way, speakers usually guess what kind of knowledge their listeners have and speak accordingly. We will now see how language in general and

English in particular reflects these guesses, or in other words, how these estimates of knowledge are grammaticalized.

In this section we study the ways in which context affects this understanding. Since a cognitive perspective on meaning and/or semantics is strongly context-sensitive, the dividing line between linguistic knowledge and world knowledge tends to be blurred. Because of this, ontologies can be seen as basic research tools and not a mere lexical repository.

Information structure is also one way by which speakers make guesses about the knowledge accessible to their hearers. In this lesson we study how speakers assume that a certain kind and/or amount of knowledge is already known by the addressee and how new information is to be unfolded accordingly. This packaging of information is often called information structure or thematic structure. Anaphoric relations and the subsequent study of the definite/indefinite articles and the anaphoric uses of pronouns in those languages that have those grammatical structures are also studied in this lesson.

Speakers organize or package their utterances depending on how they account for these estimates of knowledge. This organization is called **information structure.**

The most general division is that made between what the speaker assumes her hearers already know and what the speaker is giving as new or additional information. This distinction is extensively and cross-linguistically grammaticalized in many different ways. In English the most frequent way to do this is by using nominals.

In the example

I'm going to buy the car

The speaker assumes that the hearer knows what car he is referring to. That is that the hearer can identify the referent, that particular car.

The general information can be presented as

I'm going to buy a car

Leaving further specifications for following utterances:

The car will be delivered within the next two weeks

Saeed explains how, if the referent is not mentioned again, it fades from salience and will need to be referred to by various support structures: *that car, that car I've always wanted,* etc. However while an entity is accessible, it can be referred to by pronouns:

It is the best you can find on the market for this price

Nominals can be linked to information structure, as Gundel et al (1993) show in their Givenness Hierarchy for English Nominals as follows:

in focus >	activated >	familiar >	unlikely indefinable >	referential >	type indefinable
{it}	{that this this N}	{that N}	{the N}	{indefinite {this N}	{a N}

Givenness Hierarchy (Gundel et al. 1993) (Adapted).

This hierarchy identifies different information states of a referent, moving left to right from **most given** to **most new.** In the second line are examples of English nominals typically used for it. The following example, from Saeed, shows how the indefinite article signals the most to the right end of the Givenness Hierarchy:

A dog next door kept me awake

This dog next door kept me awake

The dog next door kept me awake

That dog next door kept me awake

This dog/that/this kept me awake

It kept me awake

4.7. FOCUS AND TOPIC

Another way of marking information structure in English is using intonation. By doing this the assignment of primary stress to some parts of the sentence makes them more prominent (capital letters are used to signal primary stress)

a. Mario embezzled the money.

b. given information: Someone embezzled the money.

c. new information: it was Mario.

The English intonation system allows the speaker to divide the sentence in two parts: a prominent part and the rest. This prominent part is called **focus** and it is used to mark new information.

Some languages use certain morphological devices to mark focus and even complete words. Other languages, such as English, use syntactic devices in addition to intonation. The most common one is the use of **cleft** or **pseudo-cleft** sentences such as in:

It was Mario who got the bank money.

It was the bank money that Mario got.

There are other resources that can be used to emphasize the topic in the discourse. Some are anaphora, using related lexemes, repetition of lexemes etc, and all of them create cohesion in the discourse as Halliday and Hasan (1976) first pointed out.

4.8. REFERENCE AND CONTEXT

Speakers calculate how much information their hearers need to make a successful reference because much of reference involves reliance on the context. For example, when shopping and ordeing fruits, the sentence

I still need two more red ones

where the client is referring to two more apples the context provides such information.

These are called by Saeed and others **"short hands"** and they are sometimes grouped with metonymy.

Saeed takes Clark's example as follows:

> "…a hypothetical situation where someone wants to buy two bottles of Heineken lager. In a pub they might say *Two bottles of Heineken, please!* In a theatre bar, where only bottled beer is available, their order might be *Two Heinekens, please!* At a sponsor's stall at an open air concert, which only serves Heineken beer in bottle and on draught they might say: *Two bottles, please!* If the stall only sold bottles, they might say *Two please!*. The point here is that the ordinary use of referring expressions involves calculation of retrievability, which takes account of contextual information."

4.9. INFERENCE

In studying context and its role in the construction of meaning we have seen how listeners participate in the construction of meaning. One way of doing this is by using inferences to fill out the text to build up an interpretation of speaker meaning. Conversational inference and conversational implicature are ways of inferring meaning from a context.

The most obvious case of conversational inference is **anaphora**. This is a special type of co-reference, that is, a referential relation between expressions where they both refer to the same entity. It could be the repetition of a noun:

*We had to hire a cab. **The** cab was shabby*

An independent nominal:

*He is a colleague of ours. **The fool** still thinks he is above the rest of the department*

or an anaphoric pronoun:

*I came across the new doctor this morning. **She** told me to be more optimistic*

These types of pronouns are precisely characterized by not having an independent reference and must rely on an antecedent.

There are also other types of inferential links made between sentences. Some are called bridging inferences and were first introduced by Clark (1977) ref. Saeed . These are some of his examples:

a. I looked into the room. **The ceiling** was very high.

b. I walked into the room. **The windows** looked out to the bay.

c. I walked into the room. **The chandeliers** sparkled brightly.

d. John went walking out at noon. **The park** was beautiful.

Saeed explains how in each example the nominal in bold occurs with a definite article showing that the speaker assumes that the referent is accessible to the listener. But, how, if it has not been mentioned earlier and it is not present in the previous sentence, did this nominal become part of given information? It seems that the listener makes a bridging inference which links the nominal to the preceding sentence and creates coherence. And in all these sentences the basis for the inference seems to be background knowledge of the kind that rooms have ceilings and windows and may have chandeliers and that one typical place to go for a walk is a park.

It seems, too, that what listeners do is make inferences to preserve some coherence in what they are told. Saeed gives the following examples to show how speakers rely on listeners inferences:

a. I left early. I had a train to catch

INFERENCE: Speaker left **because** of having to catch a train.

a. Did you give Mary the money?

b. I'm waiting for her now

INFERENCE: b did not give Mary the money.

It can be concluded that because speakers know that their listeners will flesh out their utterances with inferences, this fact gives them (speakers) the freedom to imply something rather than state it.

4.10. CONVERSATIONAL IMPLICATURE

One particular kind of implication is conversational implicature. Grice (1975,1978) proposed an approach to the speaker's and hearer's cooperative use of inference. Grice postulated a kind of tacit agreement between speakers and listeners to cooperate in communication. He called it a **cooperative principle** and organized his discussion into a number of Maxims or principles. The maxims are not rules but they seem to explain how inference works in conversation, and seems to be followed by speakers engaged in conversation. Grice (1975,1978) four main Maxims are the following:

1. Maxim of quality: Try to make your contribution one that is true. Eg: do not say what you believe is false and do not say that for which you lack evidence.
2. Maxim of quantity: make your contribution as informative as required for the current purposes of the exchange and do not make your contribution more informative than is required
3. Maxim of relevance: make your contributions relevant
4. Maxim of manner: be perspicuous and, specifically, avoid ambiguity, avoid obscurity, be brief and be orderly.

These maxims can be viewed as follows: the listener assumes that a speaker will have calculated her utterance along a number of parameters, she will tell the truth, try to estimate what her audience knows and package her material accordingly, have some idea of the current topic, and give some thought to her audience being able to understand her.

For example in

a) Did you bring me the CDs?

The store was closed

(Implicature: No)

There is no connexion between the two statements but the first speaker will understand that the answer is no because of her world

knowledge, which indicates that a probable place where CDs can be obtained is a department store.

b) Did you drink all the bottles of beer in the fridge?

I drank some

(Here the quantity implicature is the second speaker didn't drink them all).

4.11. RELEVANCE THEORY

Sperber and Wilson (1995) developed a more radical version of Grice's maxims in their Relevance theory. This approach unifies the Gricean cooperative principle and his maxims into a single principle of relevance that motivates the hearer's inferential strategy. According to this principle of relevance,

Every act of ostensive communication communicates the presumption of its optimal relevance

The term **ostensive communication** refers to a situation where there is an interaction: the communicator wants to signal something, creates a mutual environment of communication and this intention is recognized by her hearers. This is the situation of a normal conversation. In this theory it is the intent to communicate that leads the speaker to calculate the relevance of her utterance with the hearer's role in mind.

There is a distinction between implicated premises and implicated conclusions and it is exemplified in the following example taken from Saeed 2003 (ref. Sperber and Wilson 1995: 194)

a. Peter: Would you drive a Saab?

b. Mary: I wouldn't drive ANY Swedish car

(Mary's implicature: I would not drive a Saab)

Mary's implicature is the implicated conclusion but, for it to be derived, Mary has introduced into the context the linking assumption that *A Saab* is a Swedish car.

Therefore to understand an utterance hearers have to access and use contextual information of different kinds. For example, we have seen that the hearer has to be able to do the following tasks:

a. Fill in deictic structures

b. Fix the reference of nominals

c. Access background knowledge

d. Make inferences

All these involve calculation and hearers create meaning by combining linguistic and contextual information. These tasks, too, draw upon different types of knowledge such as:

1. the language used (Spanish, English.)
2. the local contextual information (when and where uttered and by whom)
3. background knowledge (e.g. cultural practices).

4.12. SPEECH ACTS

Saeed explains how the concept of speech acts is indeed another concept sharing semantic and pragmatic adscription. We can see how languages have different resources to mark questions, express wishes, give orders, etc., such as using different sentence patterns or other morphological or intonational devices. But, as he also points out, communicating functions also relies on both general knowledge of social conventions and specific knowledge of the local context of utterance. Hearers thus have to coordinate linguistic and non linguistic knowledge to interpret a speaker's intended meaning.

There are two features that characterize speech acts. These are **interactivity** and **context-dependence.**

Communicating functions involves the speaker in a coordinated activity with other language users. In certain languages (e.g. Saeed's example of Akindele) a typical afternoon greeting involves at least five exchanges of different expressions about the addressee's family and its state of health. Austin describes how bets in English exemplify this interaction. If someone says to someone else

I bet you five pounds that Real Madrid will win the league.

the bet is not performed unless the addressee makes some response such as

OK/ You are on

The second feature charactering speech acts is the fact that it is context dependence. Many speech acts rely on social conventions to support them and these conventions can be more or less explicit. For example, a judge saying

I sentence you hanged by the neck until dead

or a priest at a marriage ceremony

I now pronounce you man and wife

are all sentences carrying a special function and they can only be performed by the appropriate people in the right situation and these are sanctioned by social laws and conventions.

In English some sentences have a characteristic grammatical form associated with certain speech acts. For example, English questions prototypically have a rising intonation pattern and an inverted subject-verb word order which differentiates them from statements.

When there is a conventional match between grammatical form and speech act function, we can identify a sentence type. The following chart illustrates this.

Sentence type	Example	The use of these sentence types will perform
declarative	Hilary will be the president of the USA	an assertion
interrogative	Will Hilary be the president of the USA?	a question
imperative	Hilary, be the president of the USA!	an order
optative	If only Hilary would be the president of the USA!	a wish

However, sometimes interrogatives, for example, can be used for other purposes, such as in:

Are you going to the Antartica next summer?

Do you think I'm crazy?

Austin, the philosopher who reacted against the positivism characteristic of the Vienna Circle, held that language is used for many more things than to make statements and that, for the most part, utterances cannot be said to be either true or false. Austin observed that not all sentences are statements and also that much of conversation is made up of questions, exclamations, commands and expression of wishes such as the following taken from Saeed:

a. *Excuse me!*

b. *Are you serving?*

c. *Hello*

d. *Six pints of stout and a packet of peanuts, please*

e. *How much? Are you serious?*

Austin also found that even in sentences with the grammatical form of declaratives, not all of them are used to make statements. He identified a subgroup of declaratives about which we cannot say whether they are true or false. The following examples (ibidem) show this fact:

a. I promise to take a taxi home

b. I bet you five pounds that he gets breathalysed

c. I declare this meeting open

d. I warn you that legal action will ensue

e. I name this ship *The Flying Dutchman*

According to Austin, these sentences are in themselves a kind of action and he called them performative utterances. In the above examples, they perform the action named in the first verb. A speaker cannot expect the uttering of **a)** or **b)** in the next example to constitute the action of frying or starting.

a. I fry this egg

b. I start this car

If we insert the word *hereby*, we can see the sentence becoming nonsensical:

a. ? I hereby fry this egg

b. ? I hereby start this car

Accordingly, verbs can be classified as performative and non-performative and implicit and explicit performative utterances.

J. R. Searle (1976) further developed Austin's Speech Act Theory and classified Speech Acts into five main types. They are the following:

Representatives, which commit the speaker to the truth of the expressed proposition. The prototypical examples are *asserting* and *concluding*.

Directives, which are attempts by the speaker to get the addressee to do something. The paradigm cases are *requesting* and *questioning*. Other examples are *order, command, request, beg, beseach, advice* (to), *warn* (to), *recommend, ask*.

Commissives, which commit the speaker to some future course of action (*promising, threatening, offering*). Other examples include *vow, offer, contract*.

Expressives, which express a psychological state such as *thanking, apologising, welcoming, congratulating.* Other verbs that can be considered expressives are: *praise, blame, forgive.*

Declaratives, which effect immediate changes in the institutional state of affairs and tend to rely on elaborate extralinguistic institutions (*excommunicating, declaring war, christening, marrying, firing or dismissing from employment*).

4.13. SUMMARY

In this lesson we have studied the role of context where we saw how listeners actually participate in constructing meaning, in particular, by using inferences with the purpose of filling out the text towards an interpretation of the speaker's meaning. We have also seen one important approach to inference such as the study of conversation implicatures. In addition, anaphora has been studied as another important example of the cognitive procedure known as inference. There are also various types of co-reference: the repetition of a nominal, the use of anaphoric pronouns, and their relation with their antecedents in languages such as English or Spanish. This is called 'bridging inference' because the listener makes a connection which links the nominal to the preceding sentence and creates coherence. The basis for such inferences seems to be background knowledge.

Conversational implicatures, as put forward by Grice (1975), can be described as assumptions that hearers make about the speaker's behaviour. They give rise to different types of inferences or, from the speaker's point of view, implicatures. Grice's Cooperative Principle is based four main maxims: quality, quantity, relevance, and manner. The speaker is assumed to tell the truth, to be informative, to be relevant, and to be perspicuous (that is, to avoid ambiguity and obscurity) to be brief and orderly. Sperber and Wilson (1995) have formulated the Principle of Relevance on the grounds that the main aim in conversation is to be relevant.

SUGGESTED READINGS FOR LESSON 4

For the study of context and inference, see Saeed (2001; 2003: chapter 7).

— Saeed also comments on certain aspects like the connection of reference and context and of knowledge and context (where discourse and background knowledge are regarded as context) (see Saeed, 2001: 180-185).

— Cruse (2000: 319-326) also offers a clear treatment of deixis and of implicatures, including Grice's Cooperative Principle and Sperber and Wilson's Relevance Theory (see Cruse: chapter 17).

— For an overview of speech acts see Cruse (2000: chapter 16; 2004: chapter 17) and Saeed (2001; 2003: chapter 8).

EXERCISES AND ACTIVITIES

1. Which of the following verbs are declaratives?: apologize, authorize, argue, condemn, squeal, resign, sentence, consecrate, bid, explain, notice.

2. The following interchange

   Are you coming home for Christmas?

   I don't have paid holidays yet

   is an example of

   a. conversational implicature
   b. implicational conversation
   c. conversation mistake
   d. conversational failure

3. The following speech act

   Congratulations for having passed the Bar

   is:

   a. expressive
   b. commissive
   c. representative
   d. directive

4. Explain the deictic properties of the following verbs:

   Bring, take, fetch, come, go, return.

5. Explain the relations between the concept of deixis and the concepts of reference.

6. Which of the following is the implicated premise and which one the implicated conclusion?

   A: Am I in time for supper?

   B: I've cleared the table

7. In the example *'I hereby declare you innocent'* the verb is…:

   a) performative

   b) imperative

   c) stative

   d) interrogative

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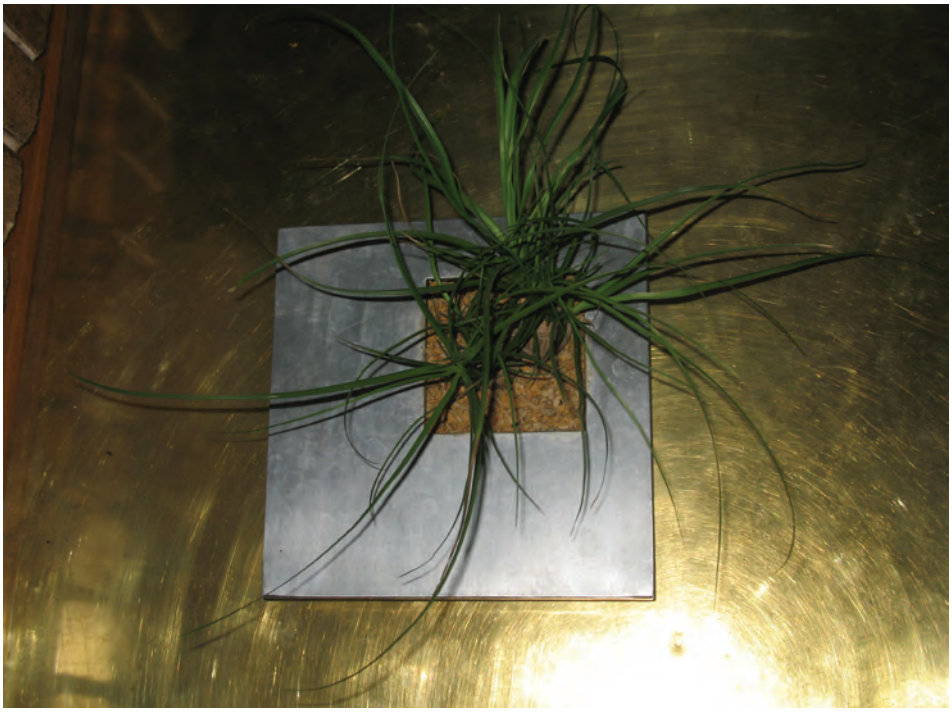
UNIT II

PARADIGMATIC AND SYNTAGMATIC RELATIONS

Lesson 5

Paradigmatic relations I: A word view



Introduction.

5.1. Paradigmatic and sytagmatic relations.

- 5.1.1. Paradigmatic relations.
- 5.1.2. Syntagmatic relations.

5.2. Componential analysis.

- 5.2.1. Theories and models of lexical decomposition.
  - 5.2.1.1. Meaning Text Theory.
  - 5.2.1.2. Natural Semantic Metalanguage.

5.3. Lexical meaning.

- 5.3.1. Defining words and lexemes.
- 5.3.2. The concept of lexical field.
- 5.3.3. Lexical relations.

Exercises and activities.

Suggested reading for lesson 5.

Objetives:

— To understand how syntagamatic and paradigmatic relations affect meaning.

— To understand paradigmatic relations from the perspective of the word.

INTRODUCTION

In the following lessons we will first study how meaning can be approached if we look at words from the inside. Then we will look into words in relation to other words that, even if they are not present in the actual sentence the word is part of, they still affect its meaning; that is, we will study paradigmatic relations. We will then go into the meaning of words when they form part of sentences or even wider stretches of language such as texts. In lessons 7 and 8 we will study syntagmatic relations.

The effect of different types of contexts on the meaning of words is not only a matter of pragmatics and/or the borderline area between semantics and pragmatics –as we have seen in lesson 4. It will be further discussed in lessons 9 and 10, when we look at cognitive approaches to semantics.

5.1. PARADIGMATIC AND SYNTAGMATIC RELATIONS

It was Ferdinad de Saussure who first established these important relations between words or, to be more precise, between word senses. He noticed that there is a connection between a word and related words belonging to a common framework. For example, there is a clear relation between all words designating kinship or all words in a pronominal system. Their relationship is based on the different kinds of structures that they represent. These relations are called paradigmatic relations.

The approach taken here looks at meaning from the double paradigmatic and syntagmatic perspective. The characteristics of human language transmission link lexemes and sense relations in a type of linear connection that has been called syntagmatic since Saussure. This means that whatever comes before or after a certain unit is not irrelevant. Moreover, it is partly determined by certain logical relations. Therefore,

sense relations will be studied from the syntagmatic perspective of the links between the different meaning components in a string of words. But this link, in turn, is directly affected by the kind of relations between the components of the argument structure and the state of affairs they are part of.

We have seen how, according to Lyons (1977, 1995), one way of formalizing or making absolutely precise the sense relations that hold between lexemes is componential analysis. Although we can also understand this concept with the help of set theory analysis, the ultimate motivation for using componential analysis in linguistics is that it provides linguists with a systematic and economical means of representing sense relations. It also presupposes that these components are universal across languages. However, this assumption can be tempered by saying that this is more of a way of formalizing that part of their prototypical or nuclear sense which they share with other lexemes.

Lyons (1977) divides sense relations in the traditional Saussurian way by specifying these two kinds of relations calling them substitutional and combinatorial sense relations. Substitutional relations are those which hold between interchangeable members of the same grammatical category. Combinatorial sense relations, on the other hand, hold typically, though not necessarily, between expressions of different grammatical categories (nouns and adjectives, verbs and adverbs, etc.) which can be put together in grammatically well-formed combinations or constructions. Hjelmslev (1961), following the same trend, had originally applied his own similar phonological approach to semantic componential substitutional analysis.

5.1.1. Paradigmatic relations

Paradigmatic relations can be seen as reflecting the semantic choices available at a particular structural point in a sentence. These relations usually involve words belonging to the same syntactic category. For example:

I will go to Paris by	car
	bus
	plane
	bicycle

Although, typically, paradigmatic relations involve words belonging to the same grammatical category, sometimes there are minor differences such as in Cruse' example:

We bought some	knives
	forks
	spoons
	cutlery

where there is a difference between *cutlery*, a mass noun, and the rest that are all count nouns.

Usually, paradigmatic relations hold between members of any of the major grammatical categories.

The following examples show paradigmatic relations involving verbs and adjectives.

Mary walked across the field
ran
ambled
crawled

I'd like a glass of red wine
white

5.1.2. Syntagmatic relations

The concept of syntagmatic relations is based on the fact that language is linear, that is, it is based on the fact that words are uttered or written one after another. Again, Cruse defines this relation as one that holds between items which occur in the same sentence, particularly those which stand in an intimate syntactic relationship. The existence of syntagmatic relations explains the fact that *I'd like a glass of dry sherry* is normal whereas *I'd like a glass of striped sherry* is odd and it has to do with the concept of semantic compatibility.

For similar reasons, *the girl ran across the field* is normal whereas *the girl sat across the field* or *the smell ran across the field* are both odd sentences. Cruse explains that syntagmatic relations are an expression of coherence constraints. By contrast, paradigmatic relations operate within a set choices in each case. However, this oddity can also be explained, in

terms of the meaning components that make up the total meaning of each word in the string of words

Studying groups of words in a common framework leads to analysing their common features of meaning and, as a result, it takes us again to the idea of componential analysis.

Componential analysis was first introduced in lesson 1 as a very basic concept which can hardly be avoided in any semantic analysis and it has to be approached now in relation to word meanings and the concepts that words are supposed to represent. We will be referring to this concept frequently both in relation to paradigmatic relations and to syntagmatic relations.

5.2. COMPONENTIAL ANALYSIS

The concept of componentiality, also referred to as *meaning components* or *componential analysis* will be explained in some more detail now. It was first introduced as an important concept that forms the basis of any semantic discussion, but in this lesson it will be studied in relation to different theories or approaches to lexical analysis.

As previously explained, there are three reasons for identifying semantic components in componential analysis. The first one is that they allow an economical characterization of lexical relations. The second is that, according to some linguistic theories, only by recognizing them can we accurately describe a range of syntactic and morphological processes. Finally, there is an ambitious claim that semantic primitives form part of our psychological architecture as they provide us with a unique view of conceptual structure, as pointed out by Jackendoff (1983). Another reason why componential analysis is important is that central to the conception of an organized lexicon is the understanding of the lexical, semantic, and conceptual unit.

Still another motivation also related to economy is the fact that a small number of semantic components can be used to define a large number of words and allow comparison across languages. Decomposition has been widely used as a descriptive device and has also been attacked by Lyons (1977, 1995), Allan (1986), and Cruse (1986, 2000), among others. We can conclude that componential analysis, although a hotly debated issue, is an important approach in semantics from many different perspectives and also that this approach is also used as a conceptual tool in semantic analysis.

The idea of reduction is based on Hjelmslev (1961), who thought that it should be possible to arrive at a restricted basic vocabulary in terms of which all other meanings can be expressed. However, Cruse (2000) notes the problems of such analysis explaining that there is a limited proportion of vocabulary that lends itself to this type of analysis leaving the majority of words unanalyzed.

The first concept to be emphasised is the idea that lexical decomposition or componential analysis rather than a distinguishable school of semantics is a method of analysis shared by several such schools.

Componential analysis involves the analysis of the sense of a lexeme into its component parts. These parts are a set of features that can be accompanied by the + / – signs to indicate the presence or absence of such a feature. These features are considered very basic or atomic concepts that some authors consider to be universal. Therefore they name them in various ways: semantic primitives, semantic components or linguistic universals.

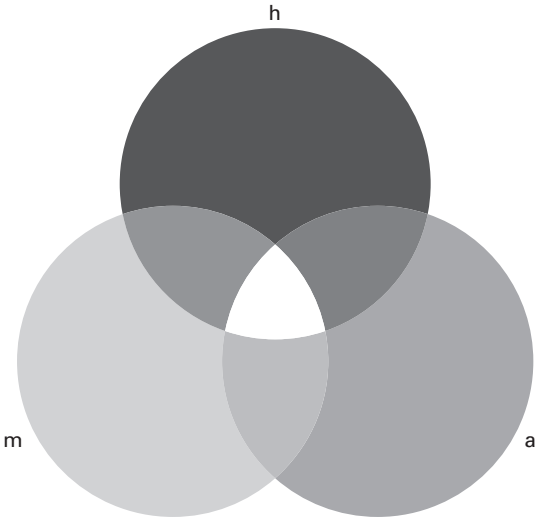
For example, we can posit a group of features to describe human beings in the following way:

man	human	male	adult
woman	human	female	adult
boy	human	male	non-adult
girl	human	female	non-adult

Or, alternatively

	human	non-human	male	female	adult	non-adult
man	+		+		+	
woman	+			+	+	
boy	+		+			+
girl	+			+		+

A set diagram can also be used to represent boy: *human, male, non-adult*:



as the intersection of sets **m, h,** and **-a**. Semantic components can be used in lexical analysis to identify lexical relations such as hyponymy.

The notion of compositionality can also be studied in relation to the mathematical concept of function. Not only does formal semantics use this concept extensively but most models of linguistic representation that attempt to capture semantic relations use this concept too.

5.2.1. Theories and models of lexical decomposition

We shall now see how all the words in a semantic field are definable in terms of the structural relations that they contract with one another (Lyons,1995) and now it is this emphasis on languages as relational structures that constitutes the essence of structuralism in linguistics.

In relation with the view that semantic representation should involve semantic components, there exists a group of authors that share the idea that these components are primitive elements which combine to form units at the level of grammar. It is the nature of combination that distinguishes the views adopted by the different authors. Katz and Fodor originally proposed a list of components. Jackendoff proposed a more articulated representation where components are arranged as functions

and arguments which can be successively embedded within one another. Still others have held that semantic components help to characterize semantic relations such as entailment.

Cruse (2000: 239) explains how componential analysis has survived intense opposition because all other alternatives, including prototype theoreticians, seem to slip into using feature representation in the end. However, he adds that even within a broad acceptance of the validity of the feature approach, there is scope for disagreement on such topics as the nature of semantic features, how they are to be discovered and verified, how they combine and whether all aspects of word meaning are susceptible to feature analysis.

In this context of componential analysis, Mel'čuk Meaning Text Theory (MTT) is briefly explained and Wierzbicka's Natural Semantic Metalanguage (NSM) is also revised.

5.2.1.1. Meaning Text Theory

The linguists of the Moscow School, with Mel'čuk as one of its most important representatives, have had a long standing interest in the construction of a non-arbitrary semantic metalanguage. From this school, scholars of the Meaning Text Theory proposed an inventory of 23 semantic primitives which do not necessarily correspond to meanings of ordinary words. The later work of this school is increasingly less interested in the fine details of semantic metalanguage but rather in documenting the semantic, syntactic, and collocational properties of large numbers of lexical units in different languages, using language-neutral notations which could furnish a potential basis for automatic translation. The semantic networks by which the meaning of a lexical item is stated in the Meaning Text Theory are not constructed within any postulated set of elementary senses and their syntax is based on predicate calculus, rather than being drawn from the analysis of any particular language.

Mel'čuk describes a number of lexical functions (LFs) of two kinds: paradigmatic LFs and syntagmatic LFs. Paradigmatic LFs link a keyword and a set of lexical items that share a non-trivial semantic component. In addition, paradigmatic LFs include all contrasts and substitution relations between lexical items in certain contexts. Syntagmatic LFs, on the other hand, formalize a semantic relation between two lexemes (L1 and L2) which is instantiated in the textual string in a non-predictable way. The way some followers of the MTT model have developed paradigmatic LFs

has proved useful in text generation because it includes not only semantic constraints in syntagmatic LFs but also a lexical bias.

5.2.1.2. Natural Semantic Metalanguage

The hallmark of Wierzbicka's (1996) approach is embodied in the principle which reads

Semantic Primitives and their elementary syntax exist as a minimal subset of ordinary natural language

Thus the proper metalanguage of semantic representation is taken to be a minimal subset of ordinary natural language (hence the designation 'Natural Semantic Metalanguage').

The concept of compositionality is closely related to definitional analysis in the sense that, as Wierzbicka says, explicating the meaning of something involves using simpler elements or reducing semantically complex words to semantically simple words. In addition, since there is a hierarchy among words, a correct definition reflects this hierarchy.

The NSM proposed by Wiezbicka and Goddard is clearly incompatible with reference-based or denotation-based approaches to meaning such as classical truth-conditional semantics or denotation-based approaches. It is also incompatible with attempts to reduce meaning to neurophysiological facts.

It is based on the semiotic principle that says that a sign cannot be reduced or analyzed into a combination of things which are not themselves signs; consequently, it is impossible to reduce meanings to any combination of things which are not themselves meanings.

The difference between logicians and proponents of NSM is that although logicians are generally more favourably disposed to the notion of a semantic metalanguage they tend to see it as existing independently of language. On the other hand, lexicographers tend to ignore the principle that the defining metalanguage should be as small as possible. Still others hold the idea that the defining metalanguage may be independent of a natural language. Wierzbicka's model is further explained, in the following lesson and in relation with semantic fields.

At one point, Goddard (1994) criticized the proposal of an abstract metalanguage claiming that, if the proposed technical terms used in primitive generative semantics such as CAUSE, NOT, BECOME, or ALIVE were not English words but more abstract elements, they still needed to

be explained and decomposed into more simple terms. The very fact that any explanation can be given establishes that it is semantically decomposable. In this vein, Lyons (1977: 12) also says that:

> *any formalism is parasitic upon ordinary everyday use of language, in that it must be understood intuitively in the basis of ordinary language.*

From this point of view, relying directly on ordinary natural language simply makes virtue out of necessity. There is no natural syntax attached to it because NSM is not attached to English words. Goddard also refers to Lyons as an inheritor of Jespersen's view that there are notional universals in language which spring from the nature of extra-linguistic reality.

A tentative conclusion about componential analysis taking into account its multiple drawbacks and criticisms is that, as Lyons says, it should not be taken

> *as a technique for the representation of all of the sense (and nothing but the sense) of lexemes, but as a way of formalizing that part of their prototypical, nuclear or focal, sense which they share with other lexemes.*

5.3. LEXICAL MEANING

Different types of meaning were introduced in lesson 1. We learned then that there are two pairs of related distinctions: functional meaning and content meaning, and grammatical meaning and lexical meaning. The former emphasized the relational content of words such as *and, or, under, between* etc., in contrast with the full semantic content of words such as *kill, cherries* or *essential*. We also explained in that lesson that there was a difference between lexical meaning and grammatical meaning. In this lesson these differences will be studied in more detail.

We have also learned how the distinction between closed-set-items and open-set-items is related to the fact that there is a functional meaning and a content meaning. Functional meaning is restricted to a limited number or words in each language whereas content meaning can be found in a limitless number of words.

The distinction between closed-set items and open-set items refers to the fact that there are usually a limited number of terms in every language that are relevant precisely because of the role they play in such a language in contrast with the unlimited number of terms that real life requires. The main function of closed-set items is relational whereas the main function of open-set items is usually referential or denotational. Both closed and open set words carry meaning, but their different functions

imply that there are differences in the types of meaning that they typically carry.

A preliminary distinction between word forms and lexemes must be made. As Cruse (2000) explains, a word can be moved about in a sentence but it cannot be interrupted or its parts reordered. This means that a word has identifiable limits that are represented in written language by blank spaces.

Word forms as in Cruse, 2000 are individuated by their form, whether phonological or graphic. Lexemes, on the other hand, can be regarded as groupings of one or more word forms, which are individuated by their roots and/or derivational affixes. So *run, runs, running* and *ran*, are word forms belonging to the same lexeme, **run**. It can be concluded that, for many semanticists, such as Cruse, it is the word-as-lexeme which is the significant unit for lexical semantics.

Defining word meaning is not an easy task. Cruse (2000) explains that languages have words because, in the culture they serve, the meanings such words carry need to be communicated. In his discussion of word meanings, he also explains how a word meaning is not allowed to straddle the vital subject-predicate divide. This leads him to explain how there are dependent and independent components of a semantic combination where the independent component is the one which determines the semantic relations of the combination as a whole with external items. Finally, Cruse concludes that there must be a relation of dependency between elements of meaning. This relation of dependency can be defined as a paradigmatic relation that operates in groups of words.

5.3.1. Defining words and lexemes

Saeed also deals with the very practical problem of defining a word and its relations with other words. We have seen how one easy way of examining words is by identifying them in writing by the white spaces that separate them. Words can also be identified at the level of phonology, where they are strings of sounds which may show internal structuring which does not occur outside the word.

We have also seen how there are different grammatical variants of the same word, such as *say, said, saying*. However from the semantic perspective we will say that these are grammatical words, also called word forms, sharing the meaning of the lexeme *say*.

There are a number of difficulties in trying to define the concept of word. There are languages where a string of amalgamated sounds does

not always coincide with individuated concepts. We will see later on how this problem also affects other issues such as dictionary writing.

Bloomfield (1984), who defined the word as a *minimum free form* or *the smallest unit of speech,* was quite aware of the problems of these definitions. He explained how these definitions cannot be applied too strictly since many word forms lie on the borderline between bound forms and words or between words and phrases. A good example is the case of English phrasal verbs. Phrasal verbs and idioms are both cases where a string of words can correspond to a single semantic unit. In fact, their constituents are in a real sense, meaningless. Sometimes, these present a problem. For instance, translating *not to look a gift horse in the mouth* has a good Spanish equivalent in *a caballo regalado no le mires el diente,* but how can one give an equivalent of *a red herring,* which means any diversion intended to distract attention from the main issue?

We usually differentiate between words senses and lexical entries. If we take the word **foot** in the following Saeed's examples:

a. He scored with his left foot

b. They made camp at the foot of the mountain

c. I ate a foot long hot-dog

this word has a different meaning in each of the three uses. In monolingual dictionaries these different senses are part of the same **entry** as in:

> **foot**, noun: 1. part the leg below the ankle. 2. base of bottom of the something. 3. unit of length.

Lexicographers call this group a lexical entry. Thus a lexical entry may contain several lexemes or senses.

It can be concluded that identifying word meaning is not an easy task. Several problems emerge when trying to pin down the meaning of words. Part of the difficulty is due to the influence of context on word meaning, as identified by Halliday, Firth and Lyons among other linguists. One effect of context is its restrictive influence in cases of collocations. Halliday (1966) shows the tendency of certain words to occur together. For example, the collocation patterns of the two adjectives *powerful* and *strong* which seem to have similar meanings is such that, although sometimes they are equivalent, such as in *strong argument* and *powerful argument,* in other cases we have *strong tea* rather than *powerful tea* and *powerful car* rather than *strong car*. Similarly, *blond* collocates with *hair* and *addle* collocates with *eggs*.

5.3.2. The concept of lexical field

The concept of lexical field is an important organizational principle in the lexicon. A lexical field is a group of lexemes that belong to a particular area of knowledge or activity. For example, the terms in cooking, in wine tasting or in medicine.

The following examples from Saeed, show how dictionaries recognize the effects of lexical fields including lexical entries labels such as *Sailing*, *Medicine*, etc. in italics:

blanket 1 verb. To cover with a blanket

blanket 2 verb. *Sailing*. To block another vessel's wind by sailing close to it on the windward side

Saeed shows how one effect of lexical fields is that lexical relations are more common between lexemes in the same field in examples such as:

peak 1: part of a mountain is a near synonym of summit

peak 2: part of a hat is a near synonym of visor.

5.3.3. Lexical relations

Since there a number of lexical relations in each language a particular lexeme can be in a number of these relations simultaneously. Therefore it is more accurate to see the lexicon much more as a network than as a listing of words in a dictionary as Saeed proposes. We will now look at the different types of lexical relations.

5.3.3.1. Homonymy

When the same phonological unit has two or more unrelated senses we have a case of homonymy. Certain authors distinguish between homographs and homophones. Homographs are unrelated senses of the same written word whereas homophones are unrelated senses of the same spoken word.

There are different types depending on their syntactic behaviour.

1. Lexemes of the same syntactic category and same spelling.
   e.g. *lap* "circuit of a course" and *lap* "part of the body when sitting down".

2. Lexemes of the same category but with different spelling:
   e.g. *ring* and *wring*.
3. Lexemes with the same spelling but different syntactic category:
   e.g.: *keep* (verb) *keep* (noun)
4. Lexemes of different categories and different spelling:
   e.g.: not and knot

5.3.3.2. Polysemy

Both polysemy and homonymy are lexical relations that deal with multiple senses of the same phonological unit. However, polysemy is used if the senses are considered to be related and homonymy if the senses invoked are considererd to be unrelated.

From the lexicographical point of view, this distinction is important. Different polysemous senses are listed under the same lexical entry, whereas different homonyms are given separate entries. Lexicographers use the criteria of relatedness to identify polysemy.

The source of polysemy is frequently metaphorical. For example,

sole, kind of fish

sole, bottom part of a shoe

5.3.3.3. Synonymy

Synonyms are different phonological words that have the same or very similar meanings. For example:

couch/ sofa, boy/lad, lawyer/attorney, toilet /lavatory, large/big

Perfect synonyms are rare; most frequently, synonyms have different ranges of distribution depending on a variety of parameters. Saeed explains how certain synonyms belonged to different dialects in the past and then they became synonyms to speakers of both dialects and gives the example of the Irish English *press* and British English *cupboard*.

It is also possible that the words belong to different registers (informal, formal, literary etc.): *wife* or *spouse* are more formal than *old lady* or *missus*. Synonyms may also have certain collocational restrictions. For example we can compare the the synonymous pair:

a big house / a large house

where *big* and *large* both have the same meaning

with the non-synonymous pair:

my big sister / my large sister

where *big* equals an older sister of the speaker and *large* refers to the sister's size.

5.3.3.4. Antonyms

Antonyms are words which are opposite in meaning. However, there are different ways in which one word is opposed to another word; that is, it is possible to identify different types of relationships under the general label of opposition.

Simple antonyms

In this relation the positive of one term implies the negative of the other. These pairs are often called binary pairs or complementary pairs:

dead / alive

pass / fail

hit / miss

Gradable antonyms

This concept is extensively explained by Cruse and others. However, we will follow Saeed closely for his pedagogical approach. He explains that antonymy is a kind of relationship between opposites where the positive of one term *does not necessarily imply the negative of the other.* For example:

rich/ poor, fast / slow, young / old, beautiful /ugly, tall/ short, clever / stupid, near / far, interesting /boring

This relation is characteristic of adjectives and has three main features that can help identify gradable antonyms.

a) There are usually intermediate terms so that between the gradable antonyms *hot* and *cold* we can find some more terms:

hot …… (warm, tepid, cool) …… cold

which means that something may be neither hot nor cold

b) The terms are usually relative, so *a thick pencil* is likely to be thinner than *a thin girl*.

In some pairs one term is more basic and common than the other. For example, in the pair *long / short,* it is more common to say *How long it is*? than to say *How short it is?*

5.3.3.5. Reverses

The prototypical reverse relation is a relation between terms describing movement, where one term describes movement in one direction and the other the same movement in the opposite direction. For example, the terms *pull / push* on a swing door tells you in which direction to apply force. Other such pairs are:

come/go, go /return, ascend /descend.

The following terms can also be called reverses when describing motion:

up / down, in / out, right / left (turn)

And, by extension, verbs referring to processes that can be reversed can also be identified as reverse antonyms:

inflate / deflate, expand /contract, fill/ empty, knit / unravel

5.3.3.6. Converses

Converses are terms which describe a relation between two entities from alternate points of view, as in:

own / belong to

above / below

employer / employee

For example, if we are told that *John owns this house,* we automatically know that *This house belongs to John.* Or that, if *Maria is Philip's employer,* we know that *Philip is Maria's employee*. This is part of the speaker's lexical or semantic knowledge of the English language.

The two sentences below are paraphrases and can be used to describe the same situation:

My office is above the cafeteria / The cafeteria is below my office

5.3.3.7. Hyponymy

Hyponymy is a relation of inclusion that operates among groups of words. A hyponym includes the meaning of a more general word. This more general term is usually called hypernym or superordinate.

The words related by hyponymy are usually part of semantic networks that form hierarchical taxonomies where the more general term is placed on top of the hierarchy.

This relation can be described as a "kind of " or "type of " relation. For example,

A fox terrier is *a kind of* dog

A dog is *a kind of* mammal

A mammal is *a kind of* animal

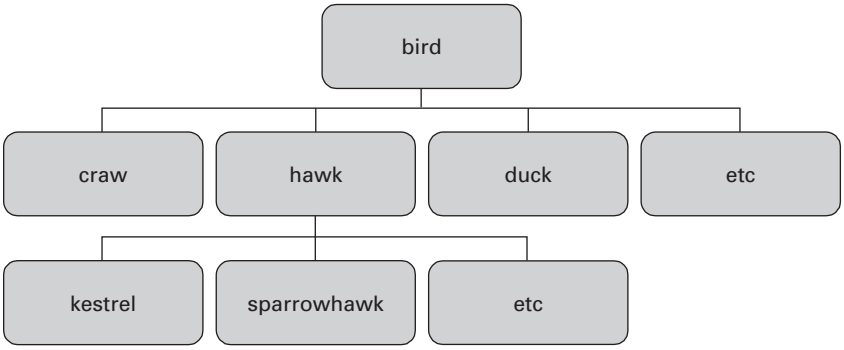
This relation is also connected to the logical concept of entailment in the sense that the meaning of a proposition can be included in the meaning of another, more general one. For example,

Jane has got another fox terrier

entails that

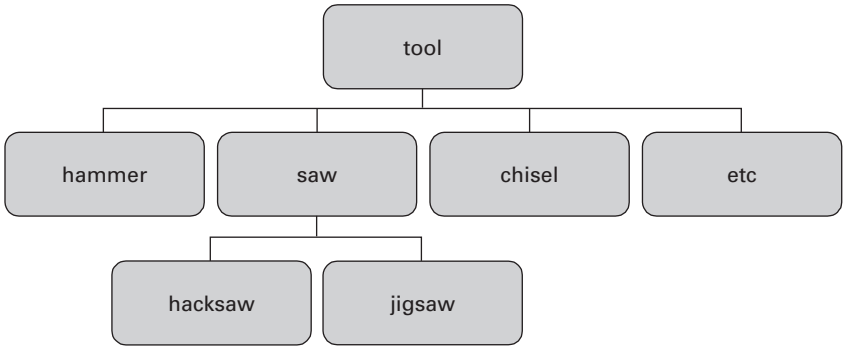
Jane has got another dog

The following examples, taken from Saeed, show how these classifications, as paradigmatic relations, operate differently in semantic networks.



Here *kestrel* is a hyponym of *hawk*, and *hawk* is a hyponym of *bird*. This relation is a transitive one, since it operates in one direction only so that *kestrel* is a hyponym of *bird*.

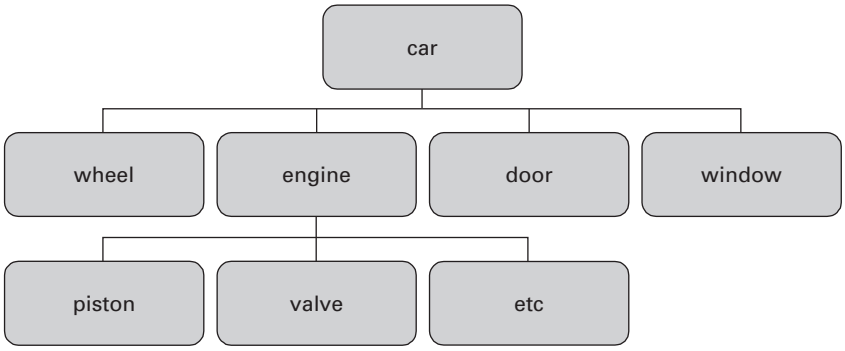
In another example, taken from the same source, we see the taxonomy of artefacts as in the following classification:



Hyponymy is a vertical relationship in a taxonomy while taxonomic sisters are in a horizontal relationship. Thus *saw* is a hyponym of *tool* and *hacksaw* and *jigsaw* are sisters in a horizontal relationship with other kinds of saw.

5.3.3.8. Meronymy

This term describes a part-whole relationship between lexical items. It can be described as *X is part of Y.* For example,



This relation is also a hierarchical relation, somewhat like a taxonomy. However meronymic hierarchies are less regular and less clear-cut than taxonomies. Meronyms vary in how necessary the part is to the whole. One important difference between hyponyms and meronyms is that hyponymy is almost always a transitive relationship whereas meronymy may or may not be transitive.

We can see transitive examples such as in *nose,* which is a typical example of a meronym of *face,* and *nail* as a meronym of *finger,* and *finger* as a meronym of *hand*.

5.3.3.9. Taxonomic sisters

Taxonomies are classification systems. Sometimes, antonymy is applied to terms that are at the same level in a taxonomy. The set of colours in English is an example of a taxonomy. There are closed taxonomies, such as the days of the week, or open taxonomies, such as the range of flavours of ice-cream sold in an ice-cream parlour, as Saeed exemplifies. Someone can always come up with a new flavour and extend the taxonomy.

Because taxonomies typically have a hierarchical structure, we also need terms to describe vertical relations as well as horizontal "sisterhood" relations. We then follow Saeed to introduce now some terms that describe this kind of vertical relation such as hyponymy.

5.3.3.10. Taxonomies and ontologies

There is a relation between the two concepts. While a taxonomy is basically a classification device where there are usually one or two types of relation, ontologies tend to include much more complex systems. In addition, ontologies describe the type of entities involved and make explicit the type of dependency relations that relate its components.

Saeed emphasizes the fact that these classifications tells us a lot about how the human mind and culture are organized, which is why taxonomies are of interest to anthropologists and linguists alike.

One special sub-case of taxonomy is the adult-young relation that can be shown in the following table:

dog	puppy
cat	kitten
cow	calf
pig	piglet
duck	duckling
swan	cygnet

Most domestic animals get a more personalized lexical treatment and lexicalize gender, as in:

dog	bitch
bull	caw
hog	sow
drake	duck

For certain authors, taxonomy, understood as a type of relation, is a subtype of hyponymy (Cruse, 1986, 2004) in that a taxonym must engage with the meaning of its superordinate in a particular way, by further specifying what is distinctive about it. Thus a taxonomy is a more specific hyponymy.

In the case of

A strawberry blonde is a type of blonde,

the key distinctive characteristic of a *blonde* is the possession of a fair hair and *strawberry blonde* makes it more precise. If we contrast it with

A blonde is a type of woman

we see that the characteristic feature of a woman in the class of human beings is her sex, thus *blonde* does not serve to specify this any further; hence it cannot represent a type and it **is not** a taxonym. Cruse also explains how a similar contrast can be seen between

A mustang is a type of horse

where we have a case of taxonomy and

A stallion is a type of horse

where stallion specifies sex, but this specification is not what distinguishes horses from other animals and we have no taxonomy but hyponymy.

In the following lesson, we will also study taxonomies but from a different point of view; from the perspective of the organization of the lexicon.

EXERCISES AND ACTIVITIES

1. Hyponymy is a sense relation between predicates (or sometimes longer phrases) such that the meaning of one predicate (or phrase) is included in the meaning of the other. For example, the meaning of *red* is included

in the meaning of *scarlet*. *Red* is the superordinate term; *scarlet* is a *hyponym* of *red* (scarlet is kind of red). Look at the following, and fill in some hyponyms:

a.

	pig	
sow		

b.

	virtue	
honesty		

c.

	tree	
beech		

2. Say which of the following are examples of meronymy
   a. belt / buckle
   b. valiant / intrepid.
   c. fork / prong.
   d. door / hinge
   e. silly / dumb
   f. jacket / lapel

3. Classify the following as cases of polysemy or homonymy: Give reasons for your answer and write a sentence for each sense.
   a. fork (in a road vs. instrument for eating)
   b. sole (bottom of foot or shoe vs. kind of fish)
   c. tail (of coat vs. animal)
   d. bat (furry mammal with membranous wings vs. implement for striking a ball in certain games)

4. The relationship between the two instances of the word *"bank"* in:
   A. *She was in the bank, queuing in front of the teller, when she heard the shooting*
   B. *She rowed fiercely to the bank to avoid the shooting* is one of:
      a. meronymy
      b. homonymy
      c. hyponymy
      d. synonymy

5. Give a list of components of the following words: skirt, book, cottage, teaspoon, violin, dream(v), kiss (v)

SUGGESTED READINGS

— For a clear exposition of syntagmatic relations, see Cruse (2000, 2004: chapter 12).

— For a very clear and complete overview of lexical decomposition, see Lyons (1995: 102-117), Saeed (2003: chapter 9). Cruse (2000, 2004: 13).

— In Cruse (2000, 2004: chapter 13) he analyzes in great detail the characteristics and problems posed by componential analysis and proposes meaning postulates as his own alternative to lexical decomposition.

ANNOTATED REFERENCES

GODDARD, C. 1994. Semantic Theory and Semantic Universals. In Goddard, C. and Wierzbicka, A. (eds.). *Semantic and Lexical Universals*. Amsterdam, Philadelphia: John Benjamins.

The theory presented in this article is contrary to reference-based or denotational approaches to meaning (for instance, to truth-conditional semantics). The author critically reviews Apresjian's, Mel'cuk's, and Zolkovskij's contributions. These authors are interested in providing a non-arbitrary semantic metalanguage.

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Lesson 6

Paradigmatic relations II

Introduction.

6.1. Semantic fields.

- 6.1.1. Types of organization in semantic fields.
- 6.1.2. Taxonomic hierarchies.
- 6.1.3. Meronymic hierarchies.
- 6.1.4. Linear structures.
- 6.1.5. Some theories of semantic fields.

6.2. Grammatical meaning.

- 6.2.1. Grammatical meaning associated with nouns and verbs.

Suggested reading for lesson 6.

Annotated references.

General references.

Activities and exercises.

Objetives:

— To understand how paradigmatic relations in the lexicon organize words in larger structures.

— To understand how the lexicon can be organized into semantic fields.

— To understand the mental organizational potential of grammar.

INTRODUCTION

The vocabulary of a language is not a mosaic of unrelated words. It is partially structured, and it is structured in both a linguistic and a psycholinguistic way. Although the two types of structures are closely related, we will concentrate on linguistic structuring only.

The linguistic organization of the lexicon may have different phonological, grammatical and semantic basis. The most prominent examples of lexical structuring are word classes (grouping of words according their syntactic properties) and word families (sets of words derived from a common root). A particularly interesting group of semantically defined structures, especially those structures generated by sense relations, or sets of sense relations, are those based on paradigmatic relations.

In this lesson we will learn more about the organization of the lexicon in different types of hierarchies. This knowledge will help us to understand the concept of computational ontologies if we study them in other subject matter.

We will also learn how relevant grammatical meanings organized in categories, such as number, gender, tense, aspect, voice and, very especially, functional roles, work in the English language.

6.1. SEMANTIC FIELDS

We have already seen that it is better to understand the lexicon as a network rather than just a list of words as in a dictionary. We can understand this network as an organizational principle in the lexicon and define it as a group of lexemes which belong to a particular activity or area of specialized knowledge, for example, the terms used in cooking or in sailing; or the vocabulary used by lawyers, car repairers or computer experts.

We have also seen in the previous lesson how the available options in a sentence can all belong to the same syntactic category but that not all of them are semantically acceptable. In Cruse' example (*the girl ran across the field/ the girl sat across the field /the smell ran across the field*), he explains that it is the combination of verb and prepositional phrase (e.g. *sat* and *across the field*) which causes oddness, whereas it is the combination of subject and verb (e.g. *the smell* and *run)* that clashes.

Another way of approaching this is by breaking down the meaning of all these words into separate components and identifying incompatibilities. This is what we do when we use componential analysis to describe the meaning of words.

Using this kind of analysis, we have also seen how for a sentence to be semantically acceptable there must not be incoherence in the meaning of the syntagmatic components of a string of words. In other words, there must be some kind of semantic compatibility between the meaning components of the elements of a sentence.

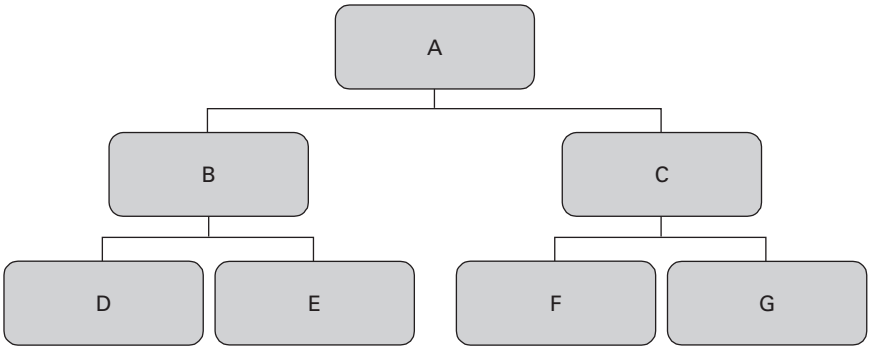
Part of the interest in the organization of the lexicon has its origin in psychology, where there are two sources of interest in the organization of the lexicon. One of them is related to the lexicalization of concepts and the other involves studies of the mental lexicon, language processing, and lexical retrieval. Scholars in computer science, artificial intelligence, and computational linguistics are interested in the organization of the lexicon because lexical items are a convenient starting point for analyzing and parsing natural language texts. Psychologists, on the other hand, see lexical organization as a tool to a better understanding of the organization of the mind.

6.1.1. Types of organization in semantic fields

Semantic fields, word fields, semantic nets, etc., are all terms for a basically similar construct. They refer to a set (of lexemes) which covers a particular conceptual area and which shows, certain semantic relations between them. Whatever the label used, what all of them have in common is the idea that words applicable to a common conceptual domain are structured one way or another. That is, they are organized within a semantic field by relations of affinity and contrast (e.g. synonymy, hyponymy, incompatibility, antonymy, etc.).

Hierarchical structuring is one possible way of organizing meaning. One of the most important types of paradigmatic structure in the lexicon is the **branching hierarchy**. It includes two types of relations:

a. relation of dominance
b. relation of differentiation.



In this taxonomy the relation of dominance is the one that holds between A and B, A and C, B and D, B and E, C and F, C and G. The relation of difference is the one that holds between B and C, D and E, and F and G.

In a well-formed hierarchy the branches never come together again as one descends the hierarchy. That is, its main formation rules stipulates that for any element in the hierarchy, except the highest, there is one and only one element which immediately dominates it.

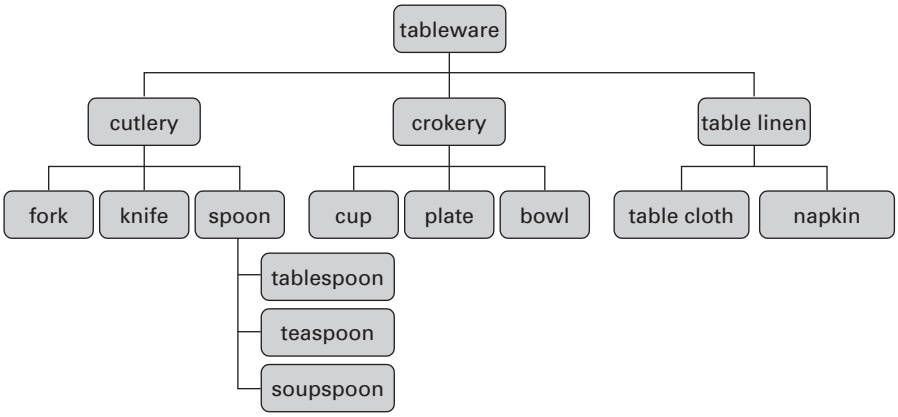
There are two main sorts of lexical hierarchies. On the one hand, there are taxonomic or classificatory hierarchies, in which the relation of dominance is taxonomy and the relation of differentiation is co-taxonomy. On the other hand, there are meronymic (or part-whole) hierarchies in which the relation of dominance is meronymy (or more accurately, holonymy) and the relation of differentiation is co-meronymy.

6.1.2. Taxonomic hierarchies

Taxonomic hierarchies are defined as classificatory systems, and they reflect the ways speakers of a language categorize the world of experience. A well ordered taxonomy shows a set of categories at different levels of specificity.

From the different levels established, **the basic level** is the one which displays the richest sets of characteristic properties. This level maximizes two properties of "good" categories: resemblance between members and

distinctiveness of members from those in sister categories. Cruse (1986) gives as a good example of a taxonomy, the tableware taxonomy. The following chart is an adaptation of his tableware taxonomy:



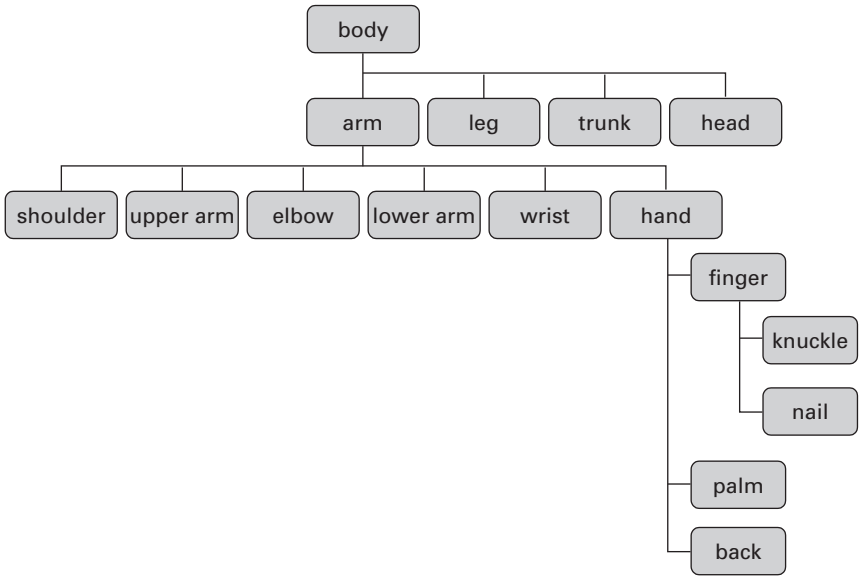
In this example, what Cruse calls substantive level is what cognitive psychologists call basic level, that is, the level displaying the richest set of characteristic or prototypical properties. Vocabulary items at levels below the basic level are more likely to be compound words than those at the basic level. In hierarchies where the basic-level items are count nouns, the items at higher levels are frequently mass nouns.

6.1.3. Meronymic hierarchies

In this type of hierarchy the relation of dominance is meronymy and the relation of differentiation is co-meronymy. The most popular example is the human body as seen from the outside.

In relation to meronymy, the main difference between a taxonomy and a meronymy is the lack of clear generalized levels in the latter. For example, there is homology between *arm* and *leg*: *knee* corresponds to *elbow*, *sole of foot* to *palm of hand* and *toes* to *fingers*, but this does not extend to other parts of the body. For this reason, Cruse explains that there seems to be no equivalent to the basic level of a taxonomy.

In hierarchies we can also find lexical gaps and contrastive aspects in different languages. Different languages do not always coincide in the structuring of the human body. We find lexical gaps when the division in one language is finer than the other.



We also find conceptual gaps in the case of a lack of Spanish or French term equivalent to the English *nut,* which includes *walnuts, peanuts, almonds,* etc., because there is not a natural category for such a thing in either language. Similarly, the English language has a three part category that includes *animals* (rabbits, frogs, and crocodiles), *fish* and *birds,* where the category *animals* excludes *birds* and *fish*.

Here Cruse sustains that we have a conceptual gap. Maybe a French or Spanish term for [non-human, animate living on soil or earth] in contrast to [non-human, animate living on either water or air] would fill this gap? On the other hand, the Spanish meronymic hierarchy would include *animal* as the higher level term.

6.1.4. Linear structures

Other lexical structures include linear structures. These, in turn, also include **chains** and **grids**. In bipolar chains, the scale on which a pair of opposites operates is often host to a number of terms which denote different degrees of a property. The most frequent pattern is one in which there are implicit superlative terms at each end of the scale, such as in:

Minuscule, tiny, small, large, huge, gigantic

By contrast, in monopolar chains there is no sense that the ends of the scale are oriented in opposite directions. According to Cruse (1986) there

are several kinds of monopolar chains: **degrees, stages, measures, ranks and sequences**.

Linear structures of the **degree** kind incorporate as part of their meaning different degrees of some continuously scaled property such as size or intensity, but there is no relation of inclusion and their boundaries are typically vague as they have not lost their gradability. Examples of degrees are the the following:

fail, pass, distinction
puddle, pond, lake, sea, ocean
glance, look, stare

Stages are points in a life cycle of something and normally involve the notion of progression, such as in:

infancy, childhood, adulthood, old age

Measures are based on a part-hole relationship with each whole divided into a number of identical parts; there is typically a geometric relationship between values of the scaled property designated by adjacent terms:

second, minute, hour, day, week, month

Ranks are linear structures where the underlying property does not vary continuously, but in discreet jumps:

lecturer, senior lecturer, reader, professor

Sequences are ordered terms where there is a property which an item has the same amount of it in every item. By contrast, in all previous examples of linear structures, there is some property which an item has more of than items which precede it in the linear structure or less than items which follow it. However, days of the week, months of the year, seasons or even parts of the day (morning, afternoon, evening, night) are examples of sequences. Cruse is of the opinion that it may be better to think in terms of features which cross- classify.

Other types of linear structures include grids and clusters. **Grids** are generated by recurrent concrete sense relations or, in other words, by recurrent semantic components. The unit of the grid is the cell, which consists of four lexical items, any of which must be uniquely predictable from the remaining three. For example, [dog, puppy, cat, kitten], [hand, finger, foot, toe].

Finally, **clusters** are essentially groups of synonyms. Clusters with an identifiable core are called centred clusters in opposition to clusters without such a core. Centred clusters are expressively neutral, stylistically unmarked and propositionally superordinate.

In the set

die, pass away, pop off, decease, breath one's last, kick the bucket

die is clearly the core member that is expressively neutral and stylistically unmarked; it cannot be propositionally superordinate because all the members of the group are synonyms.

In non-centred clusters, items spread over a spectrum of sense, but there is no superordinate term. The following linear structure is an example of a non-centred cluster:

rap, tap, knock, slap, thwack, crack, bang, thump, bump, pop, tick

6.1.5. Some theories of semantic fields

We have seen how common to most definitions of semantic fields is the idea that words applicable to a common conceptual domain are organized within a semantic field by relations of affinity and contrast (synonymy, hyponymy, antonymy, etc.).

It is also generally accepted among writers on semantic fields that the relations of contrast and affinity which order a field can be paradigmatic and syntagmatic. Paradigmatic relations such as synonymy, hyponymy, meronymy etc. exist among terms that are substitutable for one another in a well formed syntactic string, preserving well-formedness. Syntagmatic relations hold between words that collocate in a grammatical string and that have semantic affinities (e.g. one kicks with a leg or foot but not with an arm). These types of relation are closely connected with the idea of frames.

However, defining the concept of semantic fields is not an easy task. On the one hand, the related concept of 'domain' is also important. On the other, it is not yet well defined from the point of view of the consequences it bears for lexical semantics. In addition, the type of internal relations and the characteristics of such a theoretical construct are problematic and remain indeterminate. One thing is clear: the lexical structure of the lexicon —its vertical dimension— is fundamentally based on the relation of entailment.

In addition, there is no agreement either on the type of representational format to be used for semasiological structures of lexical items. Geeraerts (1995) distinguishes three types of format. The radial model proposed by Lakoff (1987), the schematic network defined by Langacker (1987), and his own overlapping model. He concludes that, despite minor differences,

these three models are notational variants because all of them account for salience effects, metaphor and metonymy, hierarchical semantic links, and discrepancies between intuitive and analytical definitions of polysemy.

From the generative perspective, we will start defining the concept of 'semantic field' saying that it is highly componential and its purpose was to find a finite set of universal semantic-conceps to be used as components into which lexemes could be decomposed. The main exponents within this tradition are Katz and Fodor, Jackendoff and Pustejovsky.

Katz and his colleagues postulate a kind of dictionary entry that includes the word being defined, its grammatical category, and a definition in the form of semantic markers and distinguishers. Markers are considered universals and thus the most general components in the classification of the lexicon. Distinguishers, on the other hand, refer to what is left and differentiate words from others which have the same marker. As a result, meaning thus has two parts: semantic meaning and extralinguistic meaning. Katz adds to this some selection restrictions which are the main constraint in the amalgamation process involved in the projection rules. This model, however, cannot define necessary and sufficient conditions for concepts or decide which features are linguistic and which are extralinguistic.

In the generative field too, Jackendoff (1983, 1990, 1996) proposes a semantic construct that he calls Lexical Conceptual Structure (LCS) and explicitly mentions semantic fields. He shares with Langacker (1987) a localistic approach in the sense that motion provides a cognitive framework for more abstract domains of meaning such as POSSESSION, COMMUNICATION, and CHANGE. In Jackendoff's localistic approach, four semantic fields cross-classify the basic ontological categories of EVENT and STATE. These four semantic fields are *spatial location, temporal location, property ascription*, and *possession*. He establishes four categories of state, uses the notation BE to represent them and calls them semantic fields. By extending spatial conceptualization into non-spatial domains he distinguishes BE Temp (location in time), BE Loc (location in space), BE Ident (ascription of a property in locational terms), and BE Poss (possession as location). In the same way, he distinguishes between Go Loc, Go Temp, Go Ident, and Go Poss.

Several authors have observed that Jackendoff's classification model has little internal structure. For instance, while his LCS framework provides a means for distinguishing between verbs across the classes that it establishes, it does not provide a principled account of constraints within its semantic classes. This model cannot differentiate between different classes of verbs, as he claims his LCS framework does by encoding the

appropriate argument structure, because it cannot explain lexical selection, given that, for example, all manner verbs have the same conceptual structure as their corresponding superordinate.

Another approach within the compositional view is offered by Pustejovsky (1995), who presents a more conservative approach to decomposition and where lexical templates are minimally decomposed into structured forms or templates rather than sets of features. The result is a generative framework for the composition of lexical meanings which defines the well-formedness conditions for semantic expressions in a language. Verbs are classified following Vendler's (1967) types. Membership in an aspectual class determines much of the semantic behaviour of the lexical item. However, he does not develop the concept of semantic field, strictly speaking.

Within the non-generative tradition, several proposals have emerged in the last twenty years or so. An original contribution in linguistics is the one proposed by Fillmore with his case grammar. The frame model (Fillmore and Atkins's, 1992), describes lexical meaning in terms of structured background of experience, belief, or practices necessary for its understanding. Words are thus not related to each other directly, but only by virtue of their links to common background frames, which provide a conceptual foundation for their meaning. This approach led to the development of the Berkeley/ICSI Framenet project. It includes an inventory of categories such as *communication, cognition, emotion, space, time, motion, body, interpersonal and institutional transaction, health, and healthcare*. The authors explain that each entry is the result of the exploitation of corpus evidence and native speaker intuition designed to provide a complete account of the syntactic and semantic combinatorial properties of a lexical unit. Words are collected in semantically related sets belonging to these domains but the authors do not explain the criteria for domain membership or the internal organization of the domain. Part of the description of each word is the identification of the semantic frame underlying its analysis. Faber and Mairal (1999) suggest that the frame model is an alternative to semantic fields and explain that they differ from each other in that semantic fields model is a system of paradigmatic and syntagmatic relationships connecting members of selected sets of lexical items.

A semantic field, as understood by Lehrer and Kittay (1992), consists of a lexical field which is applied to some content domain (a conceptual space, an experiential domain, or a practice). Within frame semantics a word is defined with reference to a structured background of experience, beliefs, or practices, whereas frames are interpretative devices by which

we understand a term's deployment in a given context. The notion of frame grew out of Fillmore's (1968) early work in case grammar.

Along the same line Kittay and Lehrer (1992) propose frames and fields as a lexical organization and suggest that frames and fields might be mutually derivable. By broadening the concept of field to include some systematic treatment of syntagmatic relations, they wonder if it would be possible to build enough into a field so as to incorporate the pragmatic information that frames account for. Whereas frames are good for accounting for pragmatic information, they do not seem to be susceptible to systematization and have the disadvantage of the 'wild card' concept of domain in cognitive linguistics. They also say that the interest in the lexicon has brought up interest in fields like linguistics, psychology, and philosophy.

In their introduction, Kittay and Lehrer (1992) explain how some writers have developed the notion of semantic relations or contrasts independently of fields or frames and essentially regard them as autonomous meaning structures. In relation to contrasts, these authors advise against possible confusion among the elements to be contrasted. Whether the contrasting items are concepts, senses, or lexemes is something which should be clarified early in any discussion of these matters.

Indeed some syntactic theories hold that the semantic organization of the lexicon can predict and explain at least some syntactic regularities, which is quite natural considering that, from the communicative perspective, information transmission requires pattern organization and differentiation in the codifying system used. That is, the lexical vehicle and its morphosyntactic organization. Until now this is our only source of empirical data that could be linguistically represented (Goded and Briones, 2002).

In psychology there are two areas of interest in the organization of the lexicon. One deals with studies of the relationship between the lexicalization of concepts —that is, how concepts are expressed— and broader knowledge structures; and the second involves studies of the mental lexicon, language processing, and lexical retrieval. Semantic relations and field or frame structures seem to be operative in the mental lexicon.

Another important contribution to the concept of semantic fields was developed by Wierzbicka (1992, 1996) and Wierzbicka and Goddard with their Natural Semantic Metalanguage (NSM). We already learned something about it when we first studied the concept of componential

analysis, and later on in lesson 5.

There is one important difference between the above mentioned theories and NSM. In this model the meaning of a word does not depend on the meaning of other related words. It consists of a configuration of semantic primitives for each word. The specification of lexical relatednes within the NSM is based on definitional analysis. Each word is defined in terms of its most basic components and at the same time the word is compared with the meanings of other intuitively related words. Wierzbicka claims that non-arbitrary semantic fields can be established by comparing configurations of semantic primitives in the definitions of words. The definitions through which she postulates semantic field relatedness take the form of a shared prototypical scenario describing a highly abstract cognitive structure. When analyzing English speech verbs she observes that verbs that share semantic components also share certain syntactic frames or combination of frames. She also says that syntactic differences, which at first seem idiosyncratic, are often a sign of very real semantic differences and thus confirm the reliability of syntactic clues in semantic analysis.

As was previously said, Mel'čuk Meaning Text Theory is another possibility of organizing the lexicon. Its main interest lies in the consideration of the text as a starting point for analysis.

Mel'čuk's theory MTT (Meaning Text linguistic Theory), has been formalized in his MTM (Meaning Text Model) which is a system of rules that simulates the linguistic behavior of humans. This model tries to perform the transition from what is loosely called meanings (any information or content that the speaker wants to transmit in his / her language) and texts (any physical manifestation of speech) and vice versa.

The central component of MTM, where the biggest part of data is stored, is a formalized semantically oriented lexicon called Explanatory Combinatorial Dictionary (= ECD) which is paraphrase based.

6.2. GRAMMATICAL MEANING

Cruse explains how, traditionally, syntactic categories are defined semantically by saying, for example, that nouns are words referring to persons, places, or things, verbs are 'doing words', adjectives 'describing words', etc. However, since these definitions leaked, other approaches were attempted. Cruse suggests prototypical classification criteria where grammatical categories are like natural categories such as BIRD or FRUIT,

not definable by a set of necessary and sufficient criteria, but with fuzzy boundaries and graded typicality.

Syntactic categories used to be defined syntactically but this criterion did not hold across languages since syntactic categories are not universal and equivalent.

This lesson focusses on exemplifying how relevant grammatical meanings in categories such as number, gender, tense, aspect, voice and, very especially, functional roles, work in the English language.

6.2.1. Grammatical meanings associated with nouns and verbs

Following how Langacker, Cruse and others picture the difference between nouns, adjectives and verbs in terms of temporal stability, some conclusions can be drawn. All languages have a way of making a distinction between persistent entities, whose properties change relatively little over time, and highly time-sensitive experiences. However the most basic and more important difference can be established between entities and events, with nouns encoding entities and verbs encoding events. Grammatical meaning can be further divided into those meanings associated with nouns and those associated with verbs.

6.2.1.1. Grammatical meanings associated with nouns

Among grammatical meanings associated with nouns are definiteness, number, animacy, gender and functional roles.

Definitness is a grammatical device associated with reference and deixis. It is codified by the presence or absence of the definite article.

Number. The number system in English has only two terms: singular and plural, and plurality is not marked for gender. This contrasts with other languages which have specific forms for a dual plural, like Arabic.

Gender is closely related to animacy in the first place, and then to sex. The English pronominal system (he, she, it) can be predicted on the basis of sex only and is only marked for gender in the singular. There is a range of arbitrariness vs. motivation for gender assignment in the different languages. An example of arbitrariness is the German words *Löffel* (“spoon”; masculine), *Gabel* (“fork”; feminine) and *Messer* (“knife”; neuter). In French and German there is a strong tendency for words referring to male beings

(specially humans) to be grammatically masculine and for words referring to females to be grammatically feminine. In other languages such as Spanish, nouns and adjectives are always marked for gender. This contrasts with English where there is no gender marking for things or properties.

Since gender is closely related to animacy, prototypically, only living things can be male or female. Frawley (1992) proposed a scale for anymacy, where animacy decreases from left to right:

1st Person > 2nd Person> 3rd Person > Human > Animal > Inanimate

According to this the English pronoun system correlates with this scale:

There are different types of grammatical resources which can be used

he/she only	**he/she/it**	**she/it** only	**it** only
non-infant humans, gods, angels	infant humans animals	cars and ships	cars and ships

to convey those meanings. The most relevant are inflection, clitics and markers.

6.2.2.2. Grammatical meanings associated with verbs

English codifies a number of important grammatical meanings which are associated with the verb. These include tense, aspect, voice and functional roles. Many languages encode the timing of a designated event lexically, by inserting expressions equivalent to *yesterday, last year, next week* etc. However, only languages such as English or Spanish that encode timing distinctions by means of grammatical elements can be said to manifest the grammatical feature of tense.

Tense

Tense, aspect, and modality should also be studied as semantic systems which allow us to organize the descriptions of situations dealt with in lesson 7 Tense is used to locate a situation with respect to some reference point in time. Tense is considered to be a deictic system, because the reference point for the system is usually the act of speaking. That is, the speaker relates to the 'here and now' of the utterance. However, many natural languages do not have tense. In these cases, the distinctions of deictic temporal reference are lexicalized instead of grammaticalized. In English, both possibilities exist. In this language, temporal deictic reference

is grammaticalized via tense and lexicalized as shown by a wide variety of adverbs. Tense is addressed to as a deictic system and most grammatical tense systems help the speaker to distinguish between past, present, and future. These are the basic tenses. We can also speak about complex tenses like the pluperfect.

The way of organizing tense systems in most languages is vectorial, that is, the grammatical terms indicate the direction along the time-line from speaking time to event time.

Tenses can be divided into primary or absolute tenses. Primary tenses encode event time directly relative to time of speaking, and secondary or relative tenses, on the other hand, encode event time relative to a secondary reference time. This in turn, is located relative to speaking time, thus making the relation between event time and speaking time an indirect one.

Saeed explains how it is difficult to discuss time without, simultaneously, discussing aspect, because in many languages, including English, aspect and tense interact in subtle ways. These features are marked on verbs in similar ways, often sharing composite endings. He further explains, how aspect systems allow speakers to relate situations and time, but instead of fixing situations in time relative to the act of speaking, like tense does, aspect allows speakers to view an event in various ways. As complete or incomplete, as so short as to involve almost no time, as something stretched over a perceptible period, or as something repeated over a period.

Aspect

While tense serves to locate an event in time, aspect either encodes a particular way of conceptualizing an event or conveys information about the way the event unfolds through time. It is also important to distinguish between aspect as a semantic phenomenon and aspect markers in a language which may have various semantic functions. In addition, a lexical verb may also encode aspectual information as part of its meaning, independently of any grammatical marker; this may affect the way the meaning of a verb interacts with the meanings of aspectual markers.

Basic aspectual features

In lesson 3 we saw that not all linguists agree on the dimensions and parameters which define states of affairs or events. However, boundness (or telicity) and duration are the most commonly agreed definitional features related to time.

Aspect and tense are interrelated issues. Aspect systems help us to relate situations and time and to view an event in several ways. We can mention, for instance, the progressive or the perfect aspects.

Aspectual classes can be defined along three basic dimensions: change, boundness and duration.

Cruse uses the term *event* to cover both *states* and *events*. Other authors such as Saeed use the term *situation* to include the Vendler classification of events into four major types. Here we closely follow Cruse classification of basic aspectual features.

Change: A state of affairs can be constructed as changing or as remaining constant. A situation is described as **homogeneous** if it is construed as unchanging and **heterogeneous** if it is construed as changing. For example, if something 'happens' or 'is happening' then change is involved. For example, *freeze* implies a change of state. Other authors refer to this as a **static or non-static** state of affairs.

Boundness: some events are construed as having one or more inherent boundaries that can be at the beginning or the end of an event. It is the final boundary which is generally regarded as the more important one. An event with a final boundary is described as **telic** and one with no final boundary as **atelic**. A telic event is 'finishing' or 'being completed'.

Duration: An event may be constructed as taking time to unfold, or as occurring in an instant. An instantaneous event is described as **punctual** and an event that is spread over a time interval is described as **durative**. For example, the Spanish past tense system grammaticalizes this aspect in differentiating between *comía* y *comió*.

This language exemplifies very clearly the durative / puntual distinction. See, for example, the following contrasts:

a) María escribió una carta / b) María escribía una carta

a) Juan preparó la comida / b) Juan preparaba la comida

where the *a)* examples feature completed actions and the *b)* examples describe actions that take place over a period of time.

However, in most languages, Spanish and English included, there is an interaction between situation type and aspect. For example, certain verb forms, such as progressives, are used with some situation types but not with others. In any language, the options for describing situations are constrained by natural combinations of situation type, aspect and tense, and speakers know the valid combinations. According to Saeed, it is the task of semanticists to reflect and describe this knowledge.

Saeed distinguishes between the three dimensions involved in the codification of time and aspect. Firstly, the real situations the speaker is referring to. Secondly, the situation types lexically encoded in each language. And, thirdly, the ways of viewing these situation types in terms of their internal structure; that is, the choice to focus on the beginning, middle and end phases of time.

Saeed refers to Binnick (1991) on the terminological problems arising from authors using similar or different terms for each dimension. For example, some writers use aspect for both the second and third dimensions: situation type and viewpoint. Others, reserve aspect for viewpoint and use terms like **Aktionsart,** or **modes d'action,** for situation types, real situations or both.

Functional roles

Classifying situations and defining the major aspectual classes of events is something that can be done either when studying the semantic effects of grammatical categories or when studying those aspects of meaning that belong to the level of the sentence. Since the latter falls more naturally in the context of syntagmatic relations, we will see how the above features apply into the classification of events (or situations or states of affairs) in the following lesson. There, we will also discuss the relation between functional roles, thematic roles, deep cases, participant roles etc. and their grammatical realization.

SUGGESTED READINGS

— For grammatical meaning associated with nouns, noun phrases and the verb see Cruse' *Meaning in Language* (2000: 268-288; 2004:275-311)

— For ways of classifying situation types and types of verbs see Saeed (2003: 117-134)

— For a thorough explanation of aspect see Kreidler (1998: 197-227).

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WEB PAGES

http://olst.ling.umontreal.ca/pdf/MelcukMTTIntro.pdf

ACTIVITIES AND EXERCISES

1. Analyze the semantic field 'human body' by building a taxonomy, specifying the different meronymic relations which hold between the different items.
2. Explain how quantity is codified in the following words: scissors, cattle, oats, bellows, crowd.

3. For each of the following pair of statements, say which predicate is hyponym of which:

   3.1. a) Jane's face was red.
   b) Jane's face was crimson.

   3.2. a) Jane slapped Jim.
   b) Jane hit Jim.

   3.3. a) Peter walked home.
   b) Peter lurched home.

   3.4. a) Piers Plowman tore the Pardon.
   b) Piers Plowman cut up the Pardon.

4. In order to understand the concept of 'domain', fill in the blank spaces in the following text adapted from Cruse (2000: 142) with one word from the list bellow:

   SERVICE, NET, CRICKET BALL, FAULT, SIZE

   «To complete this elementary sketch of the relation between concepts and domains, one further elaboration is necessary. This is that a concept is typically profiled, not against a single base domain, but against several, the whole complex going under the name of domain matrix. As a relatively simple example, take the notion of TENNIS BALL. This is obviously profiled against BALL, along with sister categories such as ————————, FOOTBALL, BASKET BALL, etc. BALL, in turn is profiled against SPHERE (then SHAPE and ultimately SPACE, as well as (at least THING, ————————, WEIGHT, and ELASTICITY). At some stage, TENNIS BALL presupposes TENNIS, but the relationship is perhaps not immediate: we perhaps have TENNIS EQUIPMENT as an intermediate domain, which also include RACKET, COURT, and ———————, and TENNIS ACTIONS (for want of a better name) such as ————————, RETURN, LOB, and so on which will be immediate base domains for BALL, and probably also TENNIS JUDGEMENTS such AS IN, OUT, ————————, LET, and SCORING, all of which crucially involve BALL, and must be considered additional domains. A lot of this is speculative and arguable, but it is clear that form the cognitive linguistic perspective, a full comprehension of the meaning of *tennis ball* is going to involve all these things."

5. Provide the componential analysis of the following words: bachelor, spinster, cat, tiger, tigress.

6. Do you think componential analysis accounts for the meaning of these words satisfactorily? Give reasons for your answer.

7. Identify the tense/aspect forms of the verbs in italics (based on Saeed, 2001: 135):
   a) Mary and John *went* to the cinema.
   b) The woman *was buying* some clothes.
   c) Who *knows* the answer?
   d) They *have gone* to the cinema.
   e) He *will come* here on Monday.
   f) *You're bothering* me.
   g) They will *have arrived* at work by now.

8. The following linear structure (egg, larva, pupa, butterfly) is an example of:
   a) degree
   b) stage
   c) sequence
   d) rank

Lesson 7

Syntagmatic relations I

7.1. Introduction: aspects affecting syntagmatic relations: argument structure, lexical decomposition.

7.2. Arguments and predicates.

7.3. Sentences and situations: authors and theories.

7.4. Sentences and situations: situation types and verb types.

Suggested reading for lesson 7.

Exercises and activities.

Annotated bibliography.

General bibliography.

Objetives:

1. To revise and further understand the logical concept of argument structure and its semantic and syntactic consequences.

7.1. INTRODUCTION: ASPECTS AFFECTING SYNTAGMATIC RELATIONS: ARGUMENT STRUCTURE, LEXICAL DECOMPOSITION

We know that the meaning of a word is affected by the words that come before and after it, that is by the syntagmatic relations that the word in question is engaged in. Before we say more on the kinds of syntagmatic relations, we need to understand and revise a few important concepts. One is the concept of argument structure; the other, closely related to it, is the influence of the type of situation on the syntactic configuration of sentences for which we will study a classification of situation types.

According to Van Valin (2001), the relation that a morphosyntactic element has to the elements it cooccurs with, is termed **syntagmatic relation,** and it is one of the two fundamental relations that underlie language as a structural system. The relation holding between article and noun, subject and verb, verb and direct object, possessor noun phrase and possessed NP, or adposition and object are all examples of syntagamatic relations.

However, it may be objected that these are all morphosyntactic relations to be studied in an English Grammar course and not in a course on English semantics. The point is that, the syntax and morphology of a language affect the meaning the words have in that particular language. Let's take a simple example of how meaning is affected by syntagmatic relations, when we study word order in English. In the simple sentence

John killed Peter

John is the subject and *Peter* the object and if we change the order of the words into

Peter killed John

the whole meaning of the sentence has changed dramatically. We know that this is not the case for all languages, but in English, where word order is fairly fixed, any change in the pre established word order configuration

is meaningful. In other words, syntagmatic relations do affect meaning, and this is why we need to study in which ways this happens.

One consequence of syntagmatic relations is that there exists a kind of dependency among the elements that cooccur in a syntactic arrangement. For example, a verb like the English *fry* requires that its object is 'something cooked in fat or oil'. These requirements, that a verb imposes on its arguments, are called *selection restrictions,* and they have to do with their semantic specification.

7.2. ARGUMENTS AND PREDICATES

When in lesson 2 we saw that there were certain basic concepts that would be highly influential in any semantic analysis, we learned about the concept of argument structure. We learned then how all elements in the world around us can be ontologically understood as either entities or relations. How, while an argument designates some entity or group of entities, a predicate attributes some property or relation to the entities denoted by the arguments if there is more than one, how in most languages entities are codified as nouns and how predicates link one or more of those entities. And, finally we also noted that, in mathematical or logical terms, entities, on the one hand, could be interpreted as arguments and properties or relations, on the other, could be interpreted as functions.

Because of this, predicates and arguments in the argument structure are studied at a logical and mathematical level. This logical organization affects the following level of analysis or semantic level, which is less abstract, and which in turn also affects the next more concrete morphosyntactic organization.

It is fairly obvious that if we say *She put the book on the table* and miss the bit *on the table,* the rest *She put the book* does not make sense. This is because the argument structure of the predicate *put* calls for three arguments:

$$P(s, b, t)$$

or in logical terms:

$$Fx\ (a, b, c)$$

In the string of words that make up a sentence, a word is connected to the ones next to it in a so called syntagmatic relationship. But this word is also part of a certain logical structure which calls for certain obligatory elements to make sense.

For example, the difference between COME and GO is based, among other things, on their different argument structure. COME is a one place

predicate because the trajectory of the agent in the verb action is such that the agent is moving from one place to the place where the speaker is. That is, SOMEONE comes to the place where the speaker is located. Therefore the target position as such does not necessarily need to be mentioned. As a result, PLACE is not an argument of the verb.

If we say *He´s coming* [Ch] = [Come, he] the argument structure has one argument only and if we say *He´s coming here* we are having a one place predicate too, even if the adjunct *here* is highly relevant. This is because the verb COME lexicalizes the position of the speaker in relation with the target position of the agent.

On the other hand GO is a two place predicate because it lexicalizes both the agent and the agent´s target position. The lexicalization of agent´s target location is part of the meaning of the verb and therefore it must be mentioned. That is, SOMEONE goes SOMEWHERE. The SOMEWHERE is an essential part of the meaning of the verb GO whereas it´s not essential in the verb COME where the location of the speaker is part of the meaning of the verb.

Arguments in the argument structure can take different semantic roles and in certain languages such as English the order of constituents very frequently marks a semantic role as well. That is, the semantic role of a constituent forces a certain syntactic patterning. Hence the importance of word order in English. We will study the relation between the semantics of a sentence and the type of roles of participants in the following lesson.

7.2.1. Lexical decomposition

Lexical decomposition is another concept we have also dealt with in previous chapters. The reason for mentioning it again now is that, if we consider the sentence from the point of view of syntagmatic relations, we also need to take into account the semantic features of the components of the argument structure as a way of forcing the semantic compatibility between the lexical components of both, the predicate and the arguments that underlie the meaning of a sentence.

7.3. SENTENCES AND SITUATIONS: AUTHORS AND THEORIES

Situation type is a label for the typology of situations encoded in the semantics of a language. In the previous section, we learned how there are certain basic aspectual features that can be used to characterize situations or events (in Cruse's terms) or states of affairs' in other linguists' terms. These dimensions or parameters or basic aspectual features usually include the following: static / non static, telic / atelic, punctual / durative.

However the way different authors (Van Valin, Dik and Jackendoff) approach the relationship between states of affairs and participant roles is not exactly the same. The following chart illustrates this.

State of Affairs/Participant roles

	Van Valin	**Dik**	**Jackendoff**
Major contribution	Simplification of participant roles into two main categories: actor and undergoer	Predication: Relations and/or properties of terms. Predicate frames: a concept taken from predicate logic which starts from the idea that a property or relation is assigned to a number of arguments/terms	* Conceptual Structures: they have nothing to do with participants in the SoA * The event structure
Definition. Includes number of participants in the definition	Yes, the definition includes them «We use the term State of Affairs to refer to phenomena in the world, and, following a tradition dating back to Aristotle, we propose that there are four basic types of state of affairs".	The term State of Affairs is used here in the wide sense of conception of something which can be case in some world. It is a conceptual entity. The structural unit which describes this is the predication. The number of participants depends on the type of predication.	No. Its seminal definition do not take into account participants
Dimensions or Parameters which define SoA or events	* Number of participants * Whether there is terminal point * Whether the SoA happens spontaneously or is induced	[dyn] [con] [tel] Situation – Position – + State – – Event + Action + + Accomplishment + + + Activity + + – Process + – Chance + – + Dynamism + – –	States, Activities, Accomplishment, Achievements
Types of SoA or types of events	**Situations:** Static, non dynamic SoA which may involve the location of participant, the state or condition of a participant, or an internal experience of a participant (Fred liking Alice) **Events:** SoA which seem to happen instantly. E.g ballo-ons popping, a glass shattering, a building blowing up	[dyn] [con] [tel] Situation – Position – + State – – Event + Action + + Accomplishment + + + Activity + + – Process + – Chance + – + Dynamism + – –	States, Activities, Accomplishment, Achievements

State of Affairs/Participant's roles (cont.)

	Van Valin	Dik	Jackendoff
Types of SoA or types of events	**Processes:** SoA which involve change and take place over time, e.g. a change in location (a book falling to the floor), in state or condition (ice melting, clothes drying) **Actions:** Dynamic SoA in which a participant does something		
Relation with predicate	Indirect: Different SoA give base to the classification of two basic (and a number of derived) verb class distinctions which, in turn, can be rewritten as logical structures.	Direct: Predication is the starting point of the whole analysis	Indirect

As we see, depending on the different authors the state of affairs is configured as a function of the participants or as a function of a number of features that define such a state of affairs. It is not easy to establish universal criteria in these definitions but it seems that all languages codify certain logic and semantic aspects that can be called universal.

We will be taking the above-mentioned aspectual features as the more widely accepted ones by most authors in linguistics. However, we must also accept the fact that the basics upon which the conceptual instruments an author uses for his/her analysis affects such analysis. Moreover, the definition of such instruments for conceptual analysis is highly motivated by previous epistemological positions.

Van Valin, Dik and Jackendoff, have been selected as authors that use those aspects of the configuration of meaning which have to do with argument structure from different, sometimes opposed, perspectives. However, it seems that they all share the idea that language representation has to account for different levels of abstraction.

For example, Van Valin's major contribution is a simplification of participant's roles into two main categories, **actor** and **undergoer**. Dik proposes **predicate frames** as basic structures, linking properties or relations with entities of various kinds. These frames affecting subsequent, more and more concrete developments. Finally, Jackendoff also developed his **conceptual structures,** starting from the idea that properties and relations can be linked to entities.

There is a plainly admitted circularity in the definition of these two concepts as Martin Arista (2001) claims. Certain authors define SoA along a number of parameters or dimensions which are considered primitives (Van Valin, 1997) giving a passing reference to those primitives whereas others (Dik, 1989) begin with a detailed description of such parameters. Jackendoff (1991), following the Vendler tradition, but differing and expanding his framework, defines his four types of situation, along a number of what he calls: *"a set of more fundamental parameters... dimensionality and bounding, motivated independently for the conceptualization of objects"*.

Dik's (1997) definitions of both the concept of predication and the concept of predicate frames are taken as important seminal concepts. Also, Jackendoff's (1983, 1990, 1996) conceptual structures are taken to be seminal concepts and, in a way, configuring states of affairs in his particular componential way. Finally, VanValin's definition of State of Affairs is included in the chart as a very simple and useful starting-point (see Van Valin and Lapolla, 1997).

According to Dik, the structural unit that describes the state of affairs, which, in turn, is defined as something which can be the case in some world, is the predication. The main difference between the first two and Jackendoff is that for the latter it is, basically, the *conceptualization of time* that counts in the description of SoA (or *Situations* as Jackendoff prefers to call them) while both Dik and Van Valin admit that there might be other dimensions or parameters equally relevant.

One important factor in this analysis is whether the number of participants is or is not included in the definition of a state of affairs. Van Valin is the only one including this dimension in the definition of states of affairs, whereas Dik takes it to depend on the type of predication and proposes five features to shape the state of affairs: dynamic, telic, momentaneous, control, and experience. For Jackendoff, however, participants are not contemplated in his seminal definition of conceptual structures which are taken to be of an even more abstract nature.

And still another important point in the definition of semantic roles, participant roles, thematic roles, or whatever term is used to define the elements participating in a SoA, is whether they exist independently of the SoA or if they are a function of such a SoA.

Vendler's classification of Aktionsart, which has proved to have had a long and successful influence, does not include the type of actions where the role of an active participant constitutes the most prototypical feature of the action defined. Van Valin uses the term *state of affairs* to refer to

phenomena in the world and proposes four kinds of state of affairs. It is remarkable to notice how VanValin acknowledges his sources quoting Aristotle and referring to a tradition that can be traced back to the Greeks. That is particularly interesting because this explicit mention could be interpreted as a link to the empiricist tradition.

Some authors (e.g. Van Valin and Lapolla, 1997) also differentiate between thematic relations and argument positions, claiming that thematic relations are linguistic entities whereas participant roles are not because they are properties of the state of affairs in the world. Van Valin also says that situations, events, actions, and processes are all states of affairs that the sentence expresses.

In conclusion, it could be said that there are a number of dimensions or parameters which define states of affairs according to Jackendoff, Van Valin, and Dik. Van Valin considers three aspects: the number of participants, whether there is a terminal point in such a state of affairs, and whether the state of affairs referred to happens spontaneously or is induced. Jackendoff takes only two: whether the dimension of time is or is not present and whether this time configuration is or is not bounded and telic. And Dik defines his *state of affairs* along five features: dynamic, telic, momentaneous, control, and experience.

The most interesting contribution of Van Valin's lexical representation is that he has developed a kind of metalanguage to represent the different types of verbs. Van Valin states that *"participant roles are a function of the state of affairs and do not exist independently of them",* whereas for Dik semantic roles can be defined along a number of semantic parameters (+ – telic, + – momentanous,+– control, + – dynamic, + – experience) which are considered more primitive abstract features.

Saeed (2001) simplifies things and concludes that entities in a sentence can have different roles and that such roles have a number of labels in semantics, including participant roles (Allan,1986), deep semantic cases (Fillmore, 1968), semantic roles (Givón, 1990), thematic relations (Jackendoff, 1972 and Gruber 1976), and thematic roles (Dowty, 1986, 1989, 1991, Jackendoff, 1990). Still others, like Dik (1997), say that semantic functions such as Agent, Goal, or Recipient specify the role which the referents of the terms involved play within the state of affairs designated by the predication in which these terms occur. That is, Dik is talking at the predication level, whereas Saeed is referring to entities in a sentence.

We can finally say that the two concepts of *state of affairs* and *participant roles* are closely related. We have studied here the way these concepts are connected and we will proceed to analyze the different kinds of participant

roles. We can also say that the distinctions that define a situation as stative or dynamic, durative or punctual and telic or atelic are most fundamental distinctions that shape a situation or state of affairs.

7.4. SENTENCES AND SITUATIONS: SITUATION TYPES AND VERB TYPES

We will be following Saeed (2003) quite closely in this section, where some of his own examples have been are adapted.

Saeed explains how certain lexical categories, particularly verbs, inherently describe different situation types and how these situation types are described by taking into account different parameters, such as whether a situation is static or not, and whether a situation has or has not an inherent terminal point. He first differentiates between stative and dynamic verbs, to further subdivide the latter into events and processes.

Stative verbs allow the speaker to view a situation as having no internal phases or changes and he or she does not overtly focus on the beginning or end of the state, even if the speaker uses a stative verb in the past such as in:

Mary loved to drive sports cars

where no attention is directed to the end of the state.

One particular characteristic that differentiates stative and dymamic verbs in English is that English progressive forms can be used to describe dynamic situations but not static ones. For example:

a. *I am learning Danish*

b. ** I am knowing Danish*

This is because the progressive aspect, marked by *–ing* above , has connotations of dynamism and change which suits an activity like *learn,* but is incompatible with a stative verb like *know*.

Certain verbs have a range of meanings, some of which are more prototypically stative than others. For example we can contrast the stative and non-stative uses of **have** by looking at how they interact with the progressive:

a. *I have a car (*own*)*

b. ** I am having a car*

c. *I am having second thoughts about this (*experiencing*)*

Dynamic verbs on the other hand are further classified into a number of types based on the semantic distinctions durative/punctual and telic/atelic. A further differentiation within dynamic situation types is between events and processes. In events the speaker views the situation as a whole, e.g.

The mine blew up

Processes are seen as having an internal structure within the dynamic situation.

She walked to the shop

They are durative and unbounded and can be further divided into **inchoactive processes** and **resultative processes**. Inchoactives are processes where our attention is directed to the beginning of a new state, or to a change of state.

The ice melted

My hair turned grey

On the other hand resultative processes are viewed as having a final point of completion.

My daughter baked a cake

John built a yacht

One important difference between these types has to do with whether they may or may not be interrupted. **Resultatives** describe a successful conclusion. If the melting action is interrupted or my hair stops turning grey, *melting* and *turning grey* can still be true descriptions of what went on. However, if my daughter and John are interrupted half way, then it is no longer true to describe them as *having baked a cake* or *built a yacht*.

Two further distinctions affect this classification of situation types. One is between **durative** and **punctual,** and another is between **telic** and **atelic.**

The durative distinction applies to situations or processes which last for a period of time while punctual describes an event that seems so instantaneous that it involves virtually no time. Note that, in the difference between

Mary coughed / Mary slept

what matters here is not how much time the actual cough takes but that the typical cough is so short that, conventionally, speakers do not focus on the internal structure of the event.

Semelfactive verbs (after the Latin word *semel* 'once') in English include verbs like *flash, shoot, knock, sneeze* and *blink*. Saed emphasizes the fact

that in English a clash between a semelfactive verb and a durative adverbial can trigger an iterative interpretation, i.e. the event is assumed to be repeated for the period described.

Fred coughed all night

The cursor flashed until the battery ran down

The **telic/atelic** distinction refers to those processes which are seen as having a natural completion. Compare

a. *Harry was building a raft.*

b. *Harry was gazing at the sea.*

If we interrupt these processes at any point, then we can correctly say

Harry gazed at the sea

But we cannot necessarily say

Harry built a yacht

if the action had been interrupted

Telic verbs are also called **resultative** verbs. Saeed suggests that another way of looking at this distinction is to say that *gaze,* being atelic, can continue indefinitely, while *build* has an implied boundary which finishes when the process will be over. He also emphasises the fact that although verbs may be inherently telic or atelic, combining them with other elements in a sentence can result in a different aspect, as below:

a. Fred was running (atelic).

b. Fred was running the London marathon (telic).

In addition the telic/atelic distinction interacts with other aspectual distinctions, such as the combination of the English perfect or simple past with a telic verb that produces an implication of completion:

a. *Mary painted my portrait*

b. *Mary has painted my portrait*

Both a and b produce an implication such as

The portrait is finished

We can see two similar classifications of situation types. Vendler (1967), based on Aristotle, first established a highly influential classification of four **situation types** using the above-mentioned distinctions. Later on, Smith (1991) added a fifth situation type, semelfactive. The following chart summarizes both Vendler and Smith's classifications:

Situation type	Features			Verbs	Example
	Static	Durative	Telic		
States:	+	+	n.a.	desire, want, love, hate, know, believe	She hated ice creams
Activities: unbounded processes	–	+	–	run, walk, swim, push a cart, drive a car	Your cat watched those birds
Accomplishment: bounded processes	–	+	+	**Run** a mile, **draw** a circle, **walk** to school, **paint** a picture, **grow up**, **deliver** a sermon, **recover** from illness	Her boss learned Japanese
Semelfactive: events that occurs once	–	–	–	Flash, shoot, banged, knock, blink, sneeze	The gate banged
Achievement: point events	–	–	+	Recognize, find, stop, start, reach the top, win the race, spot someone	The cease-fire began at noon yesterday

Another very similar analysis, with more examples, is that of Van Valin (1997)

SoA	Aktionsart	Defining parameters	Examples
Situation: Static, non-dynamic state of affairs which may involve the location of a participant, the state or condition of a participant or an internal experience of a participant	State	[+static], [-telic], [-punctual]	know, have, be sick, love
Action: Dynamic state of affairs in which a participant does something	Activity	[-static], [-telic] [-punctual]	march, walk, roll, sing
Event: State of affairs which seems to happen instantly	Achievement	[-static], [+telic], [+punctual]	pop, explode, shatter

SoA	Aktionsart	Defining parameters	Examples
Process: State of affairs which involves change and takes place over time, for example, change in location, in state or condition, or in the internal experience of a participant	Accomplishment	[-static], [+telic], [-punctual]	melt, freeze, dry, learn

SUGGESTED READINGS

— For a short introduction to verbs and situation types, see Saeed (2001: 109-114; 2003: 116-124)

— For the issue of thematic roles, see Saeed (2001: 140-155; 2003 148-164) and Cruse (2000: 281-284).

EXERCISES AND ACTIVITIES

1. What are the arguments of these sentences? Which ones are optional and which ones obligatory?
   a) John closed the door with a key.
   b) The key closed the door.
   c) The door closed.

2. Classify the following verbs according to their internal characteristics (stative/dynamic, durative/punctual, telic/atelic) according to Vendler's classification into states, activities, accomplishments, and achievements:

   know, believe, drive a car, walk to school, recover from illness, deliver a sermon, desire, run, love, run a mile, stop, reach the top, draw a circle, win the race, hate, spot someone, paint a picture, want, grow up, swim, push a cart.

a) States
b) Activities
c) Accomplishments
d) Achievements

3. Explain the difference between: *I am learning French* and **I am knowing French*

4. Give the logical formula for
   The workmen spoiled the carpet with their boots
   (use *w, c,* and *b* as logical names)
   and for *The boots spoiled the carpet*.

5. What is the relationship between the two predicates *boil* (boil 1 and boil 2) in:
   The water boiled / He boiled the water

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DIK (1997 [1989]: 228-246) offers a detailed account of the semantic hierarchy of semantic functions.

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Lesson 8

Syntagmatic relations II

Introduction.

8.1. Layers of meaning in a sentence.

8.2. Sentence semantics. Participants.

- 8.2.1. Participant roles.
- 8.2.2. Classification of participant roles.
- 8.2.3. Functional roles and grammatical characterizations.

8.3. Sentence semantics. Speech Acts.

8.4. Sentence meaning and speaker's attitude. Modality.

Exercises and activities.

Suggested reading for lesson 8.

Annotated references.

General references.

Objetives:

— To understand syntagmatic relations from the point of view of the sentence.

— To understand how sentence meaning can be understood at different levels of abstraction.

— To understand the roles that entities involve in any situation.

— To study aspect, tense, and modality as semantic systems which operate at the sentence level.

INTRODUCTION

In this lesson we will study syntagmatic relations form the sentence perspective and we will also learn how the sentence codifies meaning at different levels of abstraction. The roles that entities play in a certain situation will also be studied. Finally, we will also learn how to classify verbs according to the function they perform.

8.1. LAYERS OF MEANING IN A SENTENCE

As explained in the first two units, the differences between utterances, sentences, and propositions depend on the different levels of abstraction at which the analysis is undertaken. Meaning is relevant in a different way at each of these levels.

At a basic level, where meaning is encoded in a very abstract way, all that matters is the very basic logical relations that hold among elements of the structural unit identified. That is to say, what is relevant is the codification of entities and the type of relation that links them. The predication is the theoretical construct which encapsulates these relations. We are in Halliday's territory of the ideational or representational level.

At the proposition level, what matters is the illocutionary force of a possible fact, that is to say, the different ways in which languages of the world formalize (that is grammaticalize and/or lexicalize) stating facts, asking questions, issuing commands, making promises and, in sum, using the different language-functions that can possibly be identified.

At the sentence level, although some abstraction is still needed to understand that different utterances can correspond to the same sentence, the force of the text is in operation. The speech act in which something is said is relevant at this level.

It is also interesting to note that there is at least one model which tries to capture all these levels of linguistic abstraction, representing them in a particular configuration. That is Dik's Functional Grammar with its different developments. As previously explained, FG is theoretically grounded in predicate calculus, which in turn is a part of logic.

That part of meaning which can be derived from the way in which verbs in each language capture these kinds of abstraction is what we need to explore in this unit. To do this, we once more need to recall the concepts of participant roles which can be originally identified starting from the logical structure of each verb.

As said before it is, precisely, this simplification of the typology of participant roles, what can be considered one of Van Valin's most important contributions in linguistic analysis. And it is also this division, between a main active participant and several other undergoing participants, what illuminates the following discussion.

However, this line of argumentation also has its problems since it is somewhat circular. The logical structure of a particular verb in a language is a function of the lexical characteristics of this particular verb which forms part of a particular lexical domain in a particular language. As a result, a certain degree of contradiction can be identified between the necessary degree of abstraction required by any linguistic model and the requirements for concreteness that verbs used in the real world call for.

8.2. SENTENCE SEMANTICS. PARTICIPANTS

It is important to keep in mind the concept of participant roles because, firstly, they are described in semantic terms and, secondly, because their semantic configuration have certain syntactic effects at the sentence level of analysis. It is also important to understand that there is only partial agreement in the treatment of these issues. This variaty is reflected in the terminology used: functional roles, case roles, deep cases, participant roles, and thematic roles. They all are names given to the semantic realization of participants in the predicate structure. It should be noted that there are many borderline cases and, consequently, the best approach to be taken is to characterize the prototypical cases only.

We see how there are some aspects of meaning that belong to the level of the sentence. However, at this level there is no agreement among linguists either on the terminology used or on the concepts that certain terms cover. It is evident that at the sentence level the type of situations

(or states of affairs) and the participants taking part in them are interrelated. But there are also other important categories such as **tense** and **aspect,** which in some languages operate at the sentence level.

Two things seem to be quite evident. First, that there is a certain level of abstraction where participants in of a situation or state of affairs can be identified and, second, that not all languages codify, lexically or grammatically, these participants, and that, when they are codified, the way they are materialized in different languages is not the same. In other words, the features which characterize participants are not highlighted in the same way cross-linguistically. However, when languages are examined, it appears that the same roles crop up again and again, but it also seems that in a certain sense there is a limited number of possibilities.

We studied in previous lessons how different authors classify types of states of affairs and how these descriptions affect the way they define the role of participants in a particular state of affairs.

Some authors (e.g. Van Valin and LaPolla, 1997) differentiate between thematic relations and argument positions claiming that thematic relations are linguistic entities whereas participant roles are not because they are properties of the state of affairs in the world. Van Valin also says that situations, events, actions, and processes are all states of affairs that the sentence expresses. Finally Van Valin proposes a simplified range of participant roles for which he defines only two macroroles: *actor* and *undergoer.*

Cruse (2004: 293) gives a good description of both the foundations of the typology, starting with Fillomore's proposals and some of its problems and alternative views. We will be following Cruse' description but, instead of using the label *functional roles*, we will be using the term **participant roles** as it seems to be more iconic.

8.2.1. Participant roles

In the sentence *John opened the door,* we can identify two main participants, *John* and *the door*. These, however, have different roles in the act of opening: *John* is the doer, the agent, and supplies the force necessary to open the door; *the door* is passive, is affected by the action, and undergoes the designated change of state.

If in turn we now consider the sentence *John saw the door*, we have again two participants but one of them has another possible relationship with the verb. *John* is no longer a supplier of force resulting in a change of state of the door; in fact, he is now the entity that is affected, in the

sense that he has a perceptual experience. However, it would be misleading to say that John's experience was caused by the door, in the same sense that the door's opening was caused by John.

These relations illustrated above are called functional roles, case roles, deep cases, participant roles or thematic roles as we have seen. This variety shows the fact that they not only vary in the names given by different authors but, more importantly, in the description given to some of them. Although none of the suggestions has so far received general acceptance, since it seems to be a limited number of possibilities, we will be following Fillmore and the subsequent divisions made by Cruse.

A preliminary division must be made between the more central or relevant roles, called functional roles by Cruse and what he calls circumstantial roles. He illustrates this difference in the following example:

a. John repaired his bicycle in the garage.

b. John put his bicycle in the garage.

In **b** the relation between *in the garage* and the rest of the sentence is much more essential than in **a**. This is so because *put* is a three argument predicate (<u>you</u> **1** put <u>something</u> **2** <u>somewhere</u> **3**) and you cannot avoid mentioning argument 3 because it would render the clause ungrammatical. In other words it would not make sense to say *"John put his bicycle….."*. On the other hand *repair* is a two place predicate where the nominal phrase *in the garage* fulfils a circumstantial role, not a functional one. From the grammatical point of view, circumstantial roles are clausal adjuncts and they are optional.

Indications of functional roles or the status of complement are the following:

1. They occur as subject, direct object or indirect object of verb
2. Omission leads to latency (i.e. the 'missing' element must be recovered from context.

8.2.2. Classification of participant roles

The classification of participant roles, based both on Fillmore and Cruse, is as follows

AGENTIVE

Fillmore(1968) defined this role as the case of the typically animate perceived instigator of the action identified by the verb. However, other

authors (Cruse, 2003) see various problems with this definition and suggest further subdivisions such as *force* or *effector* for non-animate instigators in the case of force and for when an agent-like entity provides the force but not the will as in the case of effector.

We will stick to the idea that a prototypical agent must be animate.

Ronaldo *kicks the ball*

INSTRUMENT

This is the case of the inanimate force or object casually involved in the state or action defined by the verb. Cruse argues that instruments are supposed to be inanimate and questions how to analyse sniffer dogs in *The police used sniffer dogs to locate the drugs*. It is suggested here that *sniffer dogs* should be considered INSTRUMENT.

Peter used ***the ice pick*** *to kill the victim*
The ice pick *killed the victim*
They signed the agreement with ***the same pen***
He wiped the wound ***with a dirty cloth***

Objective. According to Fillmore, this is the semantically most neutral case and the concept should be limited to things which are affected by the action identified by the verb. Cruse explains that a frequent division under this heading focuses on whether the affected entity is changed by the process or action or not. Thus an unchanged inanimate affected entity is **theme** and a changed entity is **patient**. Since this latter division is the most widely referred to we will be using this classification and we will not refer to the generic **objective** case.

THEME

Is the entity which is moved by an action, or whose location is described. This entity usually remains unchanged.

Roberto passed ***the ball*** *wide*
The book *is in the library*

PATIENT

Is the entity undergoing the effect of some action, often undergoing some change of state.

The sun melted ***the ice***
Mary minced ***the meat***

On the other hand **factitive,** the participant role defined by Fillmore as *the case of the object or being resulting from the action or state*

identified by the verb, or understood as part of the meaning of the verb is also identified as **patient**. Fillmore gives the following example for a factitive (patient) case:

*John cooked **a delicious meal***

DATIVE also called EXPERIENCER is the case of the animate being affected by the state or action identified by the verb.

***Carmen** heard the choir singing*
*The choir enchanted **Carmen***
***Mary** saw the smoke*
***John** felt ill*

Fillmore does not identify this case separately from the dative. Cruse instead suggests another variation distinguishing between experiencer and benefactive also called **beneficiary** by other authors such as Saeed. This participant role is defined as the entity for whose benefit the action was performed:

*William filled in the form **for his grandmother***
*He baked **me** a cake*
***Robert** received a gift of flowers*

LOCATIVE

Is the case which identifies the location or special orientation of the state or action identified by the verb.

*The witch was hiding **in the woods***
*The pianist played **in the stage***
*Mary vaulted **the wall***
*John put his finger **on the button***

Again, Cruse makes various dynamic subdivisions. The first is static location or the place in which something is situated or takes place. Source, path and goal are variations of this locative case.

Source is the entity from which something move, either literally or metaphorically.

*The plane came back **from Paris***
*We got the idea **from a French magazine***
***The lamp** emits heat*

Path. This case is not always recognized separately from a general locative.

*She crossed **the street***

Goal is the entity towards which something moves, either literally or metaphorically:

We finally reached ***the summit***
Peter handed his licence ***to the policeman***
Pat told the joke ***to his friends***

However, since there are many more borderline cases, more criteria are needed. Cruse suggests that any proposed subdivision of a participant role should have grammatical consequences, and he concludes that the best approach may be to characterize the prototypical cases only.

The approach taken in this book follows this line and characterizes only prototypical cases.

8.2.3. Functional roles and grammatical characterizations

There has always been a link between functional roles and grammatical characterizations such as subject and object. Traditionally, the subject is the 'doer' and the object is the 'done to' (in the active voice), but there are frequent situations when this is not so. Fillmore proposed an activity hierarchy as follows:

AGENTIVE > INSTRUMENTAL > EXPERIENCER > LOCATIVE > OBJECTIVE

This means that, since in English a subject is obligatory, if there is only one noun phrase in a sentence, it automatically becomes the subject.

Although these issues are still under debate, Fillmore's proposal seems to be fairly well accepted by most semanticists and syntacticians.

8.3. SENTENCE SEMANTICS. SPEECH ACTS

Part of speaking or understanding a language is knowing whether we have been asked a question, given an order or requested to do something in that particular language. That is the part of the meaning of a sentence that is communicated by its illocutionary force.

Following Austin (1975), Cruse (2000:331; 2004:346) explains how communication is not just a matter of expressing propositions. Nor is it the logical understanding of the elements involved in a predication. To communicate, he adds, we must express propositions with a particular illocutionary force, and in so doing we perform particular kinds of action

such as stating, asking, promising, warning, and so on, which have come to be called speech acts. So it is important to distinguish between three sorts of things that one is doing in the course of producing an utterance. These are usually called locutionary acts, perlocutionary acts and illocutionary acts.

The first, **locutionary acts,** refer to the physical act of speaking, that is, producing a certain type of noise, conforming the grammar of some language and including the speaker's intentions.

Perlocutionary acts are acts performed by means of a language, using language as a tool; persuading someone to do something is an example of perlocutionary acts. That is, the elements which define the act are external to the locutionary act. The important thing is not the act of saying certain things *but the effects the act of saying has*.

According to Cruse, the act of cheering someone up performed by using language is a perlocutionary act, but this act does not consist in saying certain things in a certain way, but rather in having a certain effect (the addressee being in a better mood), which in principle could have been produced in some other way.

Finally, **illocutionary acts** are acts which are internal to the locutionary act. For example, if someone says to another person *I promise to buy you a ring,* they have, by simply saying these words, performed the act of promising. In lesson 4 we learned how there are a group of verbs, **performative verbs,** whose main function is to encode illocutionary force. These are: promise, beg, thank, command etc.

8.4. SENTENCE MEANING AND SPEAKER'S ATTITUDE. MODALITY

Tense, aspect, and modality should also be studied as semantic systems which allow us to organize the descriptions of situations dealt with in previous lessons. They are all elements that have something to do with the string of words that make up sentences. That is to say, these elements operate at a syntagmatic level, which is why we need to revise these concepts in the context of syntagmatic relations.

Modality can be defined as a device used by speakers to express their particular attitude towards a given proposition or situation. For example modality in English is expressed by the words *can, could, may*, *might,* etc. Modality can be deontic (when it expresses obligation or permission) and epistemic (when the speaker expresses degrees of knowledge). However,

there are cases where the same verb can express a deontic or an epistemic meaning. For example, "you can drive this car" can be interpreted as a permission or as possibility.

Evidentiality is connected with epistemic modality in the sense that it is the term used to refer to the speaker's attitude to the source of information. In English this is achieved by means of a separate clause or by parenthetical adverbials.

EXERCISES AND ACTIVITIES

1. What participant roles are represented by the italicized items in the following expressions? (Adapted from Cruse, 2004).
   a. *Mary* watched *the film*.
   b. John put the cup *on the table*.
   c. *You* can taste the wine (two possible answers).
   d. We followed *the river* for three miles.
   e. John drilled *a hole* in the wall, then filled *it* with plaster.
   f. They left *London* yesterday.
   g. *The storm* had ripped the roof off.
   h. Mary brought *John* a tie.

2. Modal verbs convey epistemic modality. Explain the speaker's attitude as codified by the modal verb in each of the following sentences (adapted from Saeed, 2001: 135).
   a. This could be my job now.
   b. They would be very sad if they knew you had failed your exam.
   c. You must be my cousin.
   d. He should buy some flowers for his girlfriend.
   e. It might rain tonight.

3. Write three sentences for each of the following cases:
   a. Three sentences which express epistemic modality.
   b. Three sentences which express deontic modality.
   c. Three sentences which express evidentiality.

SUGGESTED READINGS

— For an overview of speech acts see Cruse (2000: chapter 16; 2004: chapter 17) and Saeed (2001; 2003: chapter 8).

— For an analysis of modality and evidentiality see Cruse (2000: 286-289) and Saeed (2001: 125-133; 2003: 135-143).

— For an easy view of modality, see Kreidler (1998: 239-245).

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UNIT III

THE COGNITIVE DIMENSION OF MEANING

Lesson 9

An introduction to cognitive semantics

Introduction

9.1. The relationship between linguistic knowledge and cognition.

9.2. Approaches to categorization. Different views.

- 9.2.2. Concepts.
- 9.2.3. The nature of concepts.
- 9.2.4. The classical approach.
- 9.2.5. The standard prototype approach.

9.3. The mental representation of categories.

- 9.3.1. Basic level categories.
- 9.3.2. Characteristics of conceptual category.

9.4. The concept of frames.

9.5. Frames or Idealized Cognitive Models (ICMs).

Suggested reading for lesson 9.

Annotated references.

General references.

Exercises and activities.

Objetives:

— To learn that there are different approaches to the issue of categorization.

— To study some introductory issues related to Cognitive Linguistics.

— To understand the different approaches to the question of the relationship between linguistic knowledge and cognition.

INTRODUCTION

In lesson 2 we studied the connection between linguistic models and the different views that semanticists hold, depending on their previous ideas about how the external world is perceived and codified by speakers. We also learned that there are some important concepts that crop up again and again in semantics; we called them conceptual tools and one of them was the concept of categorization.

In this lesson we will learn some more about the different ways in which human beings try to categorize and thus understand the world around them and how all this affects the way we understand meaning. We call this approach to the understanding of meaning cognitive because it has deep roots in cognitive psychology.

We will also study the nature of concepts and the two main approaches to conceptualization, and we will finally link the different approaches to linguistic analysis and to conceptualization models. In this section we will be following Cruse 2004 and Saeed 2003, 2009, quite closely.

9.1. THE RELATIONSHIP BETWEEN LINGUISTIC KNOWLEDGE AND COGNITION

One of the most widely accepted views among cognitive linguists is the idea that that there is no separation of linguistic knowledge from general thinking. In this sense they strongly oppose the influential views of other linguists, such as Chomsky and Fodor, who see linguistic behaviour as another separate part of the general cognitive abilities which allow learning and reasoning.

Formal and functional approaches to grammar are usually linked to certain views of language and cognition. For instance, generative grammar is generally associated with the idea that knowledge of linguistic structures

and rules forms an autonomous module or faculty independent of other mental processes of attention, memory, and reasoning. This external view of an independent linguistic module is often combined with a view of internal modularity so that different levels of linguistic analysis, such as phonology, syntax, and semantics, form independent modules. This view initially supported the idea that, for example, syntactic principles can be studied without reference to semantic content.

Functionalist approaches, which, as Saeed says, are a group of theories with which cognitivists identify themselves more readily than with formal theories, imply a different view of language altogether. That is, principles of language use embody more general cognitive principles. Saeed explains that under the cognitive view the difference between language and other mental processes is one of degree but not one of kind and he adds that it makes sense to look for principles shared across a range of cognitive domains. Similarly, he argues that no adequate account of grammatical rules is possible without taking the meaning of elements into account.

One of the most interesting characteristics of cognitive linguistics is that it does not differentiate between linguistic knowledge and encyclopedic real world knowledge. From an extreme point of view, the explanation of grammatical patterns cannot be given in terms of abstract syntactic principles but only in terms of the speaker's intended meaning in particular contexts of language use.

The rejection of objectivist semantics as described by Lakoff is another defining characteristic of cognitive semantics. Lakoff calls 'doctrine' the theory of truth-conditional meaning and the theory of truth which holds that truth consists of the correspondence between symbols and states of affairs in the world. Lakoff also rejects what he, again, defines as the 'doctrine' of objective reference, which holds that there is an objectively correct way to associate symbols with things in the world.

One alternative proposal within the cognitive linguistics framework is called **experientialism**, which maintains that words and language in general have meaning only because of our interaction with the world. Meaning is embodied and does not stem from an abstract and fixed correspondence between symbols and things in the world but from the way we human beings interact with the world. We human beings have certain recurring dynamic patterns of interaction with a physical world through spatial orientation, manipulation of objects, and motor programming which stems from the way we are physically shaped. For example, we don't have our eyes on top or our head as some flat fish, living in the bottom of the ocean and moving only on its surface, do. Like many other animals, our seeing

equipment is in the front part of our head, and this fact is related to the way we move forward. This physical fact has proved to be very influential in the way we cognitively construct the world around us. These patterns structure and constrain how we construct meaning.

Embodiment as proposed by Johnson, 1987, Lakoff, 1987, and Lakoff and Johnson, 1999, constitutes a central element in the cognitive paradigm. In this sense our conceptual and linguistic system and its respective categories are constrained by the ways in which we, as human beings, perceive, categorize and symbolize experience. Linguistic codification is ultimately grounded in experience: bodily, physical, social and cultural.

9.2. APPROACHES TO CATEGORIZATION. DIFFERENT VIEWS

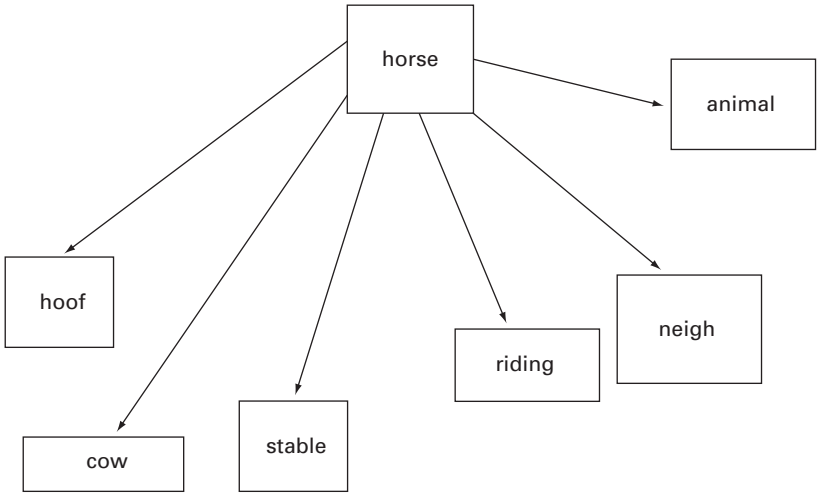
9.2.2. Concepts

Conceptualization can be seen as an essential survival element that characterizes the human species. Being born totally defenceless, it would have been very difficult for the human offspring to survive, if it were not for this powerful "understanding of the real world" feature. The conceptualization that language allows has been essential for us to survive and dominate other less intellectually endowed species. If someone hears *Beware of snakes in the trail,* it is the understanding of the concept [SNAKE] that the word *snake* triggers that allows the hearer to be aware of potential danger. It is this abstraction potential of concepts that helps us to navigate the otherwise chaotic surrounding world. Because speaker and hearer share a category [SNAKE], communication between them has been possible.

Cruse explains how concepts are vital to the efficient functioning of human cognition, and he defines them as organized bundles of stored knowledge which represent an articulation of events, entities, situations, and so on, in our experience. If we were not able to assign aspects of our experience to stable categories, the world around us would remain disorganized chaos. We would not be able to learn because each experience would be unique. It is only because we can put similar (but not identical) elements of experience into categories that we can recognize them as having happened before, and we can access stored knowledge about them. Shared categories can be seen then as a prerequisite to communication.

Cruse (2004) proposes what he calls a fairly simplistic model both of the structure of the conceptual system and of the relations between

linguistic forms and concepts. Concepts are linked together in a complex multi-dimensional network as follows. The links are of specific types (e.g. is a kind of, is a part of , is used for, lives in, etc.) and are of variable strength.



These links correspond to concepts of a more schematic nature than the concepts which they serve to connect, which are typically richer and more complex. Linguistic forms map onto conceptual structures of comparable complexity, although Cruse confines his attention to individual words only and states that the word *horse*, for example, has a direct link to the concept [HORSE] only and not to the concept [ANIMAL].

9.2.3. The nature of concepts

Concepts are used to categorize experience and they give access to knowledge concerning entities which fall into categories. As we learned in lesson 2, there are two main ways in which conceptual categories can be described. One is the classical approach to categorization and the other is the standard prototype approach.

Categorization represents for both classical and prototypical approaches what Lakoff 1987 defined as the main way we make sense of experience. This mental operation consists of grouping different things and it is essential in all mental activities. Most concepts belong to categories rather than to individualities.

9.2.4. The classical approach

9.2.4.1. Problems of the classical approach

In lesson 2 we studied how the classical view of categorization describes word meaning as a set of criterial properties or features. According to this theory, categories have clear boundaries, as membership is limited to those entities possessing the conjunction of necessary and sufficient features particular to the category in question. Within the category itself, all members have equal status thus and the main characteristic of the classical theory of categorization is that is has fixed, well delimited boundaries.

However there are important limitations and problems to this approach. In Wittgenstein's famous example of the concept of *game,* he argued that is was impossible to draw up a list of features possessed by all games which jointly distinguish games from non-games. Following his example, if we suggest the following list of features below as characterizing the concept of games

a. involves winning and losing

b. involves more than one person

c. has arbitrary rules

d. done purely for enjoyment

we will see that it is not possible to characterize all games since there are activities that we call *games* which do not satisfy these features. However, in spite of lack of compliance with the above criteria, we can communicate using the word *game* perfectly successfully.

A large body of research on category structure demonstrates that the boundaries of natural categories are fuzzy and contextually flexible. For example, Berlin and Kay (1969) studied colour categories from a psycholinguistic and anthropological point of view, and they found that, while judgements of central examples of colours were relatively constant across subjects and reliable within subjects on different occasions, judgements of borderline instances of colours, such as between red and orange, or blue and purple, showed neither agreement among subjects nor reliability within subjects on different occasions. In addition, Labov(1973) studied subjects' naming of line drawing, illustrating cups, mugs, vases, bowls etc, that systematically varied parameters such as ratio of height to width, curved or straight sides and presence or absence of handle, and he found that certain items received reliable assignation

to a particular category, while others were uncertain. He also found that contextual conditions could alter the subject's responses, so that, for instance, an instruction to imagine all the items containing rice extended the boundaries of the BOWL category, while a similar instruction to imagine coffee as contents extended the CUP category.

When asked, language users can say when an example is a good example of a category or when it is not. In the classical theory of categorization all members of a category have the same status. That is to say, something is either a member of a category or it is not. These problems are not explained in the classical theory of categorization.

9.2.5. The standard prototype approach

The standard prototype approach derives from the important research done in the 70s by Rosch et alia (1973). Her main contribution to cognitive sciences was to argue that natural conceptual categories are structured around the 'best' examples or prototypes of the categories, and that other items are assimilated to a category according to whether they sufficiently resemble the prototype or not.

Rosch's most basic experiment consisted in asking subjects to give a numerical value to their estimate of how good an example something is of a given category. That is, her experimental technique is the elicitation of subjects' **Goodness-of-Exemplar** (**GOE**) ratings. Her proposed rating scale is something like this:

1: very good example

2: good example

3: fairly good example

4: moderately good example

5: fairly poor example

6: bad example

7: very bad example / not an example at all.

According to Cruse's, the following example shows the application of the scale above to the ratings given to the category VEGETABLE:

POTATO, CARROT	1
TURNIP, CABBAGE	2
CELERY, BEETROOT	3
AUBERGINE,COURGETTE	4
PARSLEY, BASIL	5
RHUBARB	6
LEMON	7

The prototypes of categories are determined by selecting the item with the lowest average numerical score.

Ratings of GOE are strongly culturally dependent. What is a prototypical fruit in a British context is not the same in a Muslim culture. In a British context, DATE typically receives a GOE score of 3-5 relative to the category of FRUIT, but in a group of Jordanians it obtained an almost unanimous 1.

Family resemblance

The philosopher Wittgenstein introduced the concept of family resemblance. He explained that the members of a family typically resemble one another, but there may well not be any set of features that they all possess, and it may be possible to find two members who have no features in common. However, they will be linked by a chain of intermediate members with whom they do share features. So, for example, A may have no features in common with C, but has the same nose as B, who in turn has the same eyes as C.

Prototype theory includes Wittgenstein's notion that family resemblance unites the members of a category and includes the important concept of central and peripheral members.

Categories thus have internal structure. There are central members, less central members and peripheral members; and there are also borderline cases.

9.2.5.1. Prototype effects

Cruse proposes a list of important effects of prototype theory. He argues that, taken in isolation, the existence of GOE scores may not be particularly

relevant, but prototypicality, as measured by GOE scores, correlates strongly with important aspects of cognitive behaviour such as the following:

Order of mention

When subjects are asked to list members of a category, and especially if they are put under time pressure, the order of listing correlates with GOE ratings, with the prototypical member showing a strong tendency to appear early in the list.

Overall frequency

The overall frequency of mention in these lists also correlates with GOE score.

Order of acquisition

Prototypical members of categories tend to be acquired first, and order of acquisition correlates with GOE scores. This fact is also related to the following.

Vocabulary learning

Children at later stages of language acquisition, when vocabulary enlargement can be greatly influenced by explicit teaching, learn new words faster if they are provided with *definitions that focus on prototypical instantiations* than if they are given an abstract definition that more accurately reflects the word's meaning.

Speed of verification

In psycholinguistic experiments in which subjects are asked to respond as quickly as they can in a categorization task, subjects produce faster responses if the tasks involve a prototypical member.

Fuzzy boundaries

Within prototype theory, it is usually held that only the prototype has 100 per cent membership of a category, the degree of membership of other items being dependent on their degree of resemblance to the prototype. This in turn is reflected by their GOE score.

9.3. THE MENTAL REPRESENTATION OF CATEGORIES

Cruse explains that there are recent feature-based treatments of prototype structure where categories with a prototype structure are represented by a set of features. This development shows a combination of classical and prototypical approaches to the mental representation of categories. However, unlike the classical features, these do not constitute a set of necessary and sufficient criteria, except for the prototype itself. Rather the features are such that the more of them that are manifest in some particular instantiation, the higher the GEO score the item in question will obtain. In such systems, features are weighed differently depending on how close to the central feature they are.

The following example illustrates the description of the category VEHICLE in a not necessarily exhaustive number of features:

a. Designed to go on roads
b. Has ist own propulsive power
c. Can go faster than an unaided human
d. Can carry persons/goods in addition to driver
e. Has four wheels
f. Metallic construction
g. Persons/goods enclosed
h. Manoeuvrable

A central example of the category VEHICLE, such as *car* will have all those features. However, the following items would have missing elements such as in

TRAIN:
Not designed to go on roads
Not manoeuvrable

TRACTOR:
Not designed to go on roads
Driver not always enclosed

BICYCLE:
Does not have its own propulsive power

We then see that the category VEHICLE, like GAME is one for which it is not possible draw ap an adequate set of necessary and sufficient features.

9.3.1. Basic level categories

In the following examples we can see different categories of entities and we will study the characterization given by Cruse.

a. vehicle – **car** – hatchback

b. fruit – **apple** – Granny Smith

c. living thing – creature – animal – **cat** – Manx cat

d. object – implement – cutlery – **spoon** – teaspoon

The basic level or generic level of specificity has various characteristics.

1. It is the most inclusive level at which there are characteristic patterns of behavioural interaction. For example, you cannot mimic an animal unless you are told which animal to mimic.
2. It is the most inclusive level for which a clear visual image can be formed. Again one cannot visualize an item of cutlery or fruit if not told which specific type.
3. Basic level items are used for neutral, everyday reference. They are often felt by speakers as being the 'real' name of the referent.
4. The basic level is the level at which the 'best' categories can be created. And good categories include the following characteristics:
   iii. Distinctness from neighbouring categories
   iii. Within-category resemblance
   iii. Informativeness: the amount of information we gain access to if we know that something belongs to that category
5. The names of basic-level categories tend to be morphologically simple and they are not metaphorical extensions from other categories. For example, if we take spoon as the basic-level term, all the rest have more complex names: teaspoon, tablespoon, coffe-spoon tec.

Cruse studies a number of problems of the prototype model of categorization. Firstly, he explains how the basis of GOE ratings, based both on category name and on item name, is not enough. The GOE scale is a conflation of several more basic scales such as familiarity and well-formedness.

Secondly, one of the most serious shortcomings of 'standard' prototype theory is that no category boundary is recognized. However a category without a boundary is virtually useless because the primary function of

a category is to discriminate between things which are in it and things which are not in it.

Cruse takes the view that classical theory of categorization with necessary and sufficient features sets a boundary, but allows internal structure and if one rejects it, rejects both important features. As a result, he proposes that a fully satisfactory description of a category must specify both internal structure and location of boundary area. It is accepted that category boundaries are more or less fuzzy but even fuzzy boundaries have locations.

Finally, there are also problems with the degree of membership. For example, it seems that BICYCLE and SKATEBOARD are borderline cases of the category VEHICLE. Thus the notion of degree applies only to such borderline categories.

9.3.2. Characteristics of conceptual category

The characteristics of the category NATURAL CONCEPTUAL CATEGORY include distinguishing clearly between things that are in it and things that are not in it. That is, they must have well–defined boundaries. In addition, the major function of conceptual categories is to provide headings under which information can be economically stored.

9.4. THE CONCEPT OF FRAMES

Concepts cannot be treated in isolation because every concept is embedded in a larger body of knowledge of some sort. Understanding any concept requires taking into account wider domains. This is the main idea underlying Fillmore´s frame semantics. Fillmore put forward this idea as a better alternative to feature theories of word meaning.

To understand the concept MENU in the sentence *John asked to see the menu,* the concept MENU requires a wider contextual framework to be understood. This concept, whose basic meaning is 'a printed list of food items', requires some understanding of a scene in a restaurant or café, the idea of customer, waiter, sequence of meals, etc.

That is, some words which at first sight seem to be explicable by feature analysis, on closer examination turn out to require appropriate frames to be activated.

A similar notion was proposed by Langacker. He explained that concepts only make sense when viewed against the background of certain domains, which are usually themselves concepts of a more general or inclusive nature. Cruse explains how the concept of FINGER, separate from the concept of HAND, is just 'a sausage-shaped piece of bone and flesh'. HAND and FINGER are dependent on one another. If we consider the wheel of a bicycle in isolation, a wheel is just a circular structure but the concept of WHEEL is more than just this and can only be characterized by reference to a wider domain such as bicycle or wheelbarrow.

Langacker refers to the region or aspect of a domain highlighted by a concept as the **profile**, and the domain of which a part is rendered salient in this way as the **base**. In the previous examples, WHEEL profiles a region of the base BICYCLE.

Profile and base, on the other hand are not absolute terms but relational ones. For example, FINGER functions a base form more specific profilings, such as KNUCKLE and NAIL.

There is a limit to the specificity or inclusiveness in the sense that there are domains that are not profiles of anything more inclusive; these are called basic domains and include elementary notions, such as SPACE, TIME, MATTER, QUANTITY, and CHANGE. These are similar to Jackendoff's basic ontological categories.

9.5. FRAMES OR IDEALIZED COGNITIVE MODELS (ICMS)

Both Fillmore (1982) and Lakoff (1987) take a particular approach to protypicallity that links linguistic knowledge and encyclopaedic knowledge. They both claim that speakers have folk theories about the world, based on their experience and rooted in their culture. Fillmore calls these theories **frames** and Lakoff **idealized cognitive models** (ICMs). According to Saeed, these are not scientific theories or logically consistent definitions, but collections of cultural views. These authors suggest a division of our knowledge into a dictionary-type definition and an enclyclopaedia-type entry of cultural knowledge.

They both discuss the term **bachelor**. There are some bachelors that are more prototypical than others, with the Pope being far from prototypical. These authors explain that we apply the word *bachelor* within a typical marriage ICM or frame: a monogamous union between eligible people, typically involving romantic love, etc. In this model we cannot apply the term to celibate priests, Robinson Crusoe or Tarzan. In this view,

using a word involves combining semantic knowledge and enclyclopaedic knowledge, and this interaction may lead to typicality effects.

Lakoff (1987: 68) defines ICMs as the way in which we organize our knowledge. ICMs may also be defined as cognitive structures whose purpose is to represent reality from a certain perspective in such a way that they result in a process of idealization of reality.

Other authors such as Ungerer and Schmid (1996: 48-49) also provide a more detailed description of the notion of ICM. They describe them with some additional characteristics of cognitive models: they are basically open-ended, they tend to build networks since they are interrelated entities, and they are omnipresent. ICMs use different kinds of structuring principles (see Lakoff, 1987: 68): propositional structure as in Fillmore's Frame Semantics, image-schematic structure of the kind described in Langacker's Cognitive Grammar, and metaphoric and metonymic mappings as described by Lakoff and Johnson (1980, 1999). We will look at some aspects of Langaker's Cognitive Grammar in lesson 10.

SUGGESTED READINGS

— For the relationship between linguistic knowledge and cognition see Saeed (2001: 299-302) (2003: 342-43).

— For a clear exposition of the main characteristics of categorization, both in the classical account and in the prototype theory, see first Saeed (2003: 32-47) and then Cruse (2000: 130-137; 2004: 125139).

ANNOTATED REFERENCES

CUENCA, M. J. and HILFERTY, J. 1999. *Introducción a la lingüística cognitiva*. Barcelona: Ariel Lingüística.

This is an excellent introduction to cognitive linguistics for the Spanish readership. It deals with the origins of cognitive linguistics, categorization, semantic structure, metaphor and metonymy, polysemy and radial categories, grammaticalization, and the present and future of cognitive linguistics.

KLEIBER, G. 1995. *La semántica de prototipos*. Madrid: Visor.

Kleiber provides very interesting discussion of issues related to categorization: the standard classical version of categorization, an overall review of the theory of prototypes, the standard version of prototypicality and its problems, etc.

LAKOFF, G. 1987. *Women, Fire, and Dangerous Things. What Categories Reveal about the Mind*. Chicago: University of Chicago Press.

LAKOFF, G. and JOHNSON, M. 1980. *Metaphors We Live By.* Chicago: Chicago University Press.

These authors offer a very readable overview of many aspects within the cognitive paradigm, especially metaphor and its classification. In addition, some chapters are devoted to the description of objectivism and experientialism. Lakoff, one of the leading proponents of cognitive linguistics presents an update of his advances on his original proposals.

LAKOFF, G. and JOHNSON, M. 1999. *Philosophy in the Flesh. The Embodied Mind and its Challenge to Western Thought*. New York: Basic Books.

This work deals with many of the topics covered in the 1980 book by the same authors. However, it is much more exhaustive than the other one and includes the developments made within the cognitive paradigm from 1980 to 1999. For instance, the cognitive theory of metaphor is enriched by Grady's theory of primary metaphors.

TAYLOR, J. 1995 [1989]. *Linguistic Categorization. Prototypes in Linguistic Theory.* Oxford: Clarendon Press.

A very lengthy account of the theory of categorization from its origins to the appearance of prototype theory is offered here.

UNGERER, F. and SCHMID, H. 1996. *An Introduction to Cognitive Linguistics*. London and New York: Longman.

The central tenets of cognitive linguistics have been applied to semantic analysis. This book is an essential introduction to this area of research. It has been the object of both positive and negative criticism: according to Hasser's review in *Cognitive Linguistics* (11/2000), there are important objections to the text such as the author's claim that the cognitive categories discussed are mentally represented when this issue is still under scrutiny; on the other hand, Niemeyer, from the University of Bremen, was a more merciful reviewer in her 1998 review (*Cognitive Linguistics* 9(3)). The book covers the main topics dealt with in any introductory book to cognitive linguistics.

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BERLIN, B. and KEY, P. (1969). *Basic Colour Term: Their Universality and Evolution.* Berkeley: University of California Press.

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LABOV, W. 1973. 'The boundaries of the words and their meanings'. In C. J. N. Bailey and R.W. Shuy(eds) *New ways of analyzing variation in English*. Washington DC: Georgetown University Press.

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LAKOFF, G. 1987. *Women, Fire and Dangerous Things. What Categories reveal about the mind*. Chicago and London: Chicago University Press.

LAKOFF, G. 1988. Cognitive Semantics. In Eco, U. M. Santambrogio and P. Violi. *Meaning and Mental Representations*. USA: Indiana University Press.

LANGACKER, R. 1987. *Foundations of Cognitive Grammar*. Stanford: Stanford University Press.

ROSH, E.H. 1973. 'Natural categories'. *Cognitive Psychology* 4, 328-350.

TAYLOR, J. 1995 [1989]. *Linguistic Categorization. Prototypes in Linguistic. Theory.* Oxford: Clarendon Press.

UNGERER, F. and SCHMID, H.J. 1996. *An Introduction to Cognitive Linguistics*. London: Longman.

EXERCISES AND ACTIVITIES

1. How can these concepts be better defined? Mark them accordingly.
2. Define the following words in terms of binary features: robin, ostrich, bachelor, spinster.

	Classically	Prototypically
bicycle		
love		
green		
explanation		

3. Give a set of prototype features for one or more of the following conceptual categories:

   CLOTHES, FRUIT, MUSICAL INSTRUMENT, HOBBY, BUILDING, HOUSEHOLD APPLIANCE

4. Which of the following would you consider to be basic-level categories? (Cruse, 2004)

BIRO, TEASPOON, SANDAL, UNDERWEAR, SEAGULL, DAISY GRASS, BULLDOZER, BUS, MOUNTAIN BIKE, SELF RAISING FLOUR, WALNUT, SUGAR, ARMCHAIR, DELICATESSEN, SUPERMARKET, PETROL STATION, TOWN HALL, PARK, MOTORWAY, ROAD, CANAL, POLICE STATION, BUILDING, GROCERIES, WINE, CHAMPAGNE, BEVERAGE, MILK.

5. Explain how illustrationsin lessons 8, 9, 10 and 11 in pages 169, 183, 201, 227 can be better defined.

6. Explain what is odd in illustration 10.

Lesson 10

Cognitive structures

10.1. Metaphor: definition, description and examples.

10.1.1. Features of metaphor.

10.1.2. The influence of metaphor.

10.2. Metonymy.

10.3. Image-Schemas.

10.4. Polysemy.

10.3.1. Prepositions and polysemy.

10.5. Mental spaces.

10.6. Langacker's Cognitive Grammar.

Suggested reading for lesson 10.

Annotated bibliography.

Exercises and activities.

Objetives:

— To understand two kinds of structuring principles of reality: metaphor and image-schemas within the cognitive semantics framework.

— To understand polysemy as a linguistic phenomenon which can be analyzed taking into account metaphor and image-schemas.

— To provide some essential ideas about blending theory.

— To learn the basic conceptual aspects of Langacker's theory which explain some of his the basic grammatical constructions.

10.1. METAPHOR: DEFINITION, DESCRIPTION AND EXAMPLES

Until quite recently, metaphor had been considered as an important resource of figurative language and, according to Saeed, reaching its most sophisticated forms in literary or poetic language. Along the same lines, the traditional view, which dates back to Aristotle, regards metaphor as a literary phenomenon which should not be used in everyday language, in philosophy, in science, or in politics since it is a deviation from the truth. From an opposite perspective, other authors, such as Lakoff and Johnson(1980), hold that human thought processes are largely metaphorical.

In previous lessons we learned how Lakoff explained that metaphor involves three elements: a source domain, usually concrete and familiar, a target domain, usually abstract or at least less well structured, and and a set of correspondences. For example, the ARGUMENT is WAR metaphor uses notions drawn from the domain of war, such as winning and losing, attacking and defending, destroying, undermining and so on. The correspondences involved in metaphor are of two kinds: a) ontological, involving entities in two domains, and b) epistemic, involving relations of knowledge about the entities.

A very basic difference between metaphor and metonymy can be established by saying that while metaphor is based on resemblances metonymy is based on 'contiguity'. A more subtle comparison suggests that metaphor involves the use of one domain as an analogical model to structure our conception of another domain; that is, the process involves distinct conceptual domains**.** Metonymy, on the other hand, relies on an (actual, literal) association between two components within a single domain (and no structuring is involved). For example, in *the car in front decided to turn left* the container is taken for the contained as it is the (animate) driver who turned the car (inanimate) left. Or in the case of represented entity taken for representative as in *The Spanish government withdrew the troops*.

Metonymy is a resource to a much more economic use of cognition, an easier access to referent and, finally it can be used to highlight an associative relation.

The most common idea of metaphor, as Saeed puts it, is that it works somewhat like a simile in that it involves the identification of resemblances but it also goes further by causing transference, where properties are transferred from one concept to another. Cognitive linguists argue that metaphor is ubiquitous in ordinary language but other linguists, Saeed among others, claim that, while metaphor is regarded as a very important mode of thinking and talking about the world, it is also accepted that there are other, non-metaphorical, concepts as well.

For example, in the TIME IS MONEY metaphor ("you are wasting my time", "this gadget will save you hours", "how do you spend your time"), Lakoff explains how, in our culture, time is a valuable commodity because it is a limited resource that we use to accomplish our goals. And, according to him this is so, in turn, because of the way that the concept of work has developed in modern Western culture, where it is typically associated with the time it takes, and where time is precisely quantified paying people by the hour, week, month, year. However, there is another view to metaphor from a more general cognitive perspective; that is, viewing metaphor as a cognitive resource to understand and organize the world around us. This is the perspective taken in this lesson.

Before we concentrate on what is called conceptual metaphor, we need to introduce some terms. There are two important ideas involved in the description of metaphor that are referred to in various ways in the literature: *the described concept,* which is called the **target domain,** and the *comparison concept or the analogy,* called the **source domain**.

Metaphor, as defined by Lakoff and Turner (1989),

> *"…allows us to understand one domain of experience in terms of another. To serve this function, there must be some grounding, some concepts that are not completely understood via metaphor to serve as source domain."*

The famous cognitive metaphor LOVE IS A JOURNEY (Lakoff, 1993: 206) is linguistically realized in many ways, for instance, *We are going nowhere in our relationship, We're spinning our wheels, We are at a crossroads*, etc.

If we take *We're going nowhere in our relationship*, the source domain is 'journey' and the target domain 'love'. In it, the lovers are seen as the travellers, the relationship is seen as the path along which the lovers travel.

Since the end of the path is not reached and the destination is associated with reaching a goal, in this case getting married, living together, or any other manifestation of love, it is implied that the lovers will finally abandon the relationship or redirect it.

There are a number of common metaphors, such as spatial metaphors or, the LIFE IS A JOURNEY metaphor which deserve to be explained in more detail. In the spatial metaphor, there are many instances associated with the UP-DOWN orientation. Spatial metaphors, for example, *derive from the fact that we have bodies of the sort we have and that they function as they do in our physical environment.* (Lakoff, 1980: 14)

The links used to combine elements in a metaphor are of specific types (e.g. is a kind of, is a part of , is used for, lives in etc) and are of variable strength. These links correspond to concepts of a more schematic nature than the concepts which they serve to connect, which are typically richer.

The following list is Saeed's selection of Lakoff and Johnson (1980) proposed metaphors.

a. HAPPY IS UP; SAD IS DOWN
   I'm feeling *up*. My spirits *rose*. You're in *high* spirits. I'm feeling *down*. I'm *depressed*. He's really *low* these days. My spirits *sank*.

b. CONSCIOUS IS UP; UNCONSCIOUS IS DOWN.
   Wake *up*. He *fall* sleep. He *dropped* off to sleep. He's *under* hypnosis. He *sank* into a coma.

c. HEALTH AND LIFE ARE UP; SICKNES AND DEATH ARE DOWN
   He's at the *peak* of health. He's in *top* shape. He *fell* ill. He's *sinking* fast. He came *down* with the flu. His health is *declining*.

d. HAVING CONTROL OR FORCE IS UP. BEING SUBJECT TO CONTROL OR FORCE IS DOWN
   I have control *over* her. He's at the *height* of his powers. He's in a *superior* position. He ranks *above* me in strength. He's *under* my control. He *fell* from power. He's my social *inferior*.

e. GOOD IS UP; BAD IS DOWN
   Things are looking *up*. We hit a *peak* last week, but it's been *downhill* ever since. He does *high* quality work.

f. VIRTUE IS UP; DEPRAVITY IS DOWN

g. He is *high*-minded. She has *high* standards. She is an *upstanding* citizen. That was a *low* trick. Don't be *underhanded*. I wouldn't *stoop* to that. That was a *low* thing to do.

All these words codify an element of up-down directionality based on our bodily experience of lying down associated with death and illness. Verticality, on the other hand, is usually associated with consciousness, health and power.

One particular type of metaphor that Lakoff and Johnson (1980: 25) study in detail and which has an important number of derivations is the kind of ontological metaphors. They explain **ontological metaphors** or entity and substance metaphors as follows:

> *Spatial orientations like up-down, front-back, on-off, centre-periphery, and near-far provide an extraordinary rich basis for understanding concepts in orientational terms. But one can do only so much with orientation. Our experience of physical objects and substances provides a further basis for understanding —one that goes beyond mere orientation. Understanding our experiences in terms of objects and substances allows us to pick out parts of our experiences and treat them as discrete entities or substances of a uniform kind. Once we can identify our experiences as entities or substances, we can refer to them, categorize them, group them, and quantify them— and, by this means, reason about them.*
>
> *When things are not clearly discrete or bounded, we still categorize them as such , e.g., mountains, street corners, hedges, etc. Such ways of viewing physical phenomena are needed to satisfy, certain purposes that we have: locating mountains, meeting at street corners, trimming hedges. Human purposes typically require us to impose artificial boundaries that make physical phenomena discrete just as we are: entities bounded by a surface.*
>
> *Just as the basic experience of human spatial orientations give rise to orientational metaphors, so our experiences give rise to orientational metaphors, so our experience with physical objects(especially our own bodies) provide the basis for an extraordinarily wide variety of ontological metaphors, that is, ways of viewing events, activities, emotions, ideas, etc., as entities and substances. Ontological metaphors serve various purposes, and the various kinds of metaphors there are reflect the kinds of purposes served.*

10.1.1. Features of metaphor

Some features of metaphor are **conventionality, systematicity, asymmetry,** and **abstraction**. The first characteristic, *conventionality,* raises the issue of the novelty of a metaphor as metaphors may be novel or dead. In dead metaphors (Searle, 1979)

> *the original sentence meaning is by-passed and the sentence acquires a new literal meaning identical with the former metaphorical meaning. This is a shift … from the metaphorical utterance… to the literal utterance.*

Cognitive semanticists argue against this distinction on the grounds that even metaphorical expressions with which we have become familiarized go on being metaphorical and that such a distinction is not highly relevant.

Systematicity refers to the fact that the metaphorical examples which pervade language become crystallized into a series of correspondences which systematically recur over and over in conversation. Features of the source and target domain are joined so that the metaphor may be extended, or have its own internal logic. Lakoff and Turner(1989) identify a metaphor LIFE IS A JOURNEY, which pervades our ordinary way of walking. In this context, birth is often described as arrival as in *The baby is due next week*, or *She has a baby on the way*. Death, on the other hand, is viewed as a departure, as in *She passed away this morning* or *He's gone*.

Lakoff and Turner identify systematicity in the following mapping between the two concepts of the metaphor LIFE IS A JOURNEY.

LIFE IS A JOURNEY
The person leading a life is a traveller
His purposes are destinations
The means for achieving purposes are routes
Difficulties in life are impediments to travel
Counsellors are guides
Progress is the distance travelled
Things you gauge your progress by are landmarks
Material resources and talents are provisions

These authors hold that we use these mappings every day in ordinary speech, as for example in:

Her career is at a standstill;

I was bogged down in a dead-end job;

Giving the children a good start in life.

Saeed comments on Fauconnier's example of the term *computer virus* for a specific type of harmful computer programme. This coinage is based on a conceptual model of biological viruses which is generalized or schematized away from biological details. It is a metaphorical mapping between a health schema and a computer domain.

This systematicity can also be seen in the process of metaphorical extension of the vocabulary in the following list of conventionalized **mappings** from parts of the human body.

head	of department, of state, of government, of a page, of a queue, of a flower, of a beer, of stairs, of a bed
face	of a mountain, of a building, of a watch
eye	of a potato, of a needle, of a hurricane, of a butterfly, in a flower, hooks and eyes
mouth	of a hole, of a tunnel, of a cave, of a river
lip	of a cup, of a jug, of a crater, of a plate
nose	of an aircraft, of a tool, of a gun
neck	of land, of the woods, of a shirt, bottle-neck
shoulder	of a hill, of a mountain, of a bottle, of a road, of a jacket
arm	of a chair, of the sea, of a tree, of a coat or jacket, of a record player
hands	of a watch, of an altimeter/speedometer

Asymmetry is a metaphorical feature that refers to the way that metaphors are directional. These metaphors do not set up a symmetrical comparison between two concepts, establishing points of similarity, but instead they provoke the listener to transfer features from the source to the target. For example, if we take the life metaphor LIFE IS A JOURNEY, it is asymmetrical and the mapping does not work the other way round because we do not describe journeys in terms of life.

Finally, *abstraction,* is also related to the fact that a typical metaphor uses a more concrete source to describe a more abstract target. For example, in *They messed up the discussion,* the fact that an abstract state of affairs like discussing something is being made more confusing is expressed using a more concrete verb like *mess up*.

Saeed explains that this typical viewing of the abstract through the concrete is seen in cognitive semantics as allowing metaphor a central role in the categorizing of new concepts.

10.1.2. The influence of metaphor

The influence of metaphor is pervasive in linguistic analysis, but it is particularly illustrative in the case of polysemy. Saeed summarizes Sweetser (1990) and shows how she identifies the metaphorical viewing of the mental in terms of the physical (the MIND —AS— BODY metaphor) and shows its influence in the historical development of polysemy and cognate words in related languages. The English verb *see* has two meanings: the basic physical one of 'perceiving with the eyes', and the metaphorically

extended one of 'understanding' as in *I see what you mean*. Sweetser explains how over time verbs of sense perception in the Indo-European languages have shown a consistent and widespread tendency to shift from the physical to the mental domain. She claims that this basic underlying metaphor underlies the paths of semantic change in many languages so that words of seeing come to mean understanding, words of hearing to mean obeying and words of tasting to mean choosing, deciding or expressing personal preferences. She illustrates the scope of this metaphor with the following examples:

a. **Seeing as understanding**
   Indo-European root **weid-* 'see'
   Greek *eîdon* 'see', perfective *oîdoia* 'know' (> English *idea*)
   English *wise,wit*
   Latin *video*
   Irish *fios* 'knowledge'
   Spanish *ver*

b. **hearing as paying attention to, obeying**
   Indo-European root: * *k'leu-s-* (hear-listen'
   English *listen*
   Danish *lystre*'obey'

c. **tasting as choosing, expressing preferences**
   possible Indo-European root * *g'eus* 'taste'
   Greek *geúomai* 'taste'
   Latin *gustare* 'taste'
   Gothic *kiusan* 'try'
   Old English *ceosan* 'choose'
   Sanskrit *jus-* 'enjoy'
   Spanish *gustar* 'querer' (old fashioned): *como gusten ustetedes* gustar 'probar' 'degustar'.

For Sweetser this historical semantic change is not random but is influenced by the MIND-AS-BODY metaphor. This metaphor is a type of cognitive structuring and drives the lexical change illustrated above.

10.2. METONYMY

Another way of extending words meaning is metonymy. Cruse explains how metonymy is responsible for a great proportion of the cases of so-

called regular polysemy, where a parallel alternation of meaning applies over a class of instances.

For example, the TREE-WOOD readings of oak, beech, pine, cherry, etc. in

My mother left me some antiques, such as this beautiful oak chest.

both metonymy and metaphor are processes by which meaning is extended. But this extension is achieved in a different way in each case. Metaphor is based in resemblance, whereas metonymy is based on association. Metaphor involves the use of one domain as an analogical model to structure our conception of another domain; that is, the process of metaphor involves two distinct conceptual domains. Cruse further explains how metonymy, on the other hand, relies on an (actual, literal) association between two components, within a single domain.

There are various patterns of metonymy. The most frequent types of metonymy are the following (adapted from Cruse, 2004):

1. CONTAINER for CONTAINED
   a) The kettle is boiling.
   b) Room 44 wants a bottle of champagne.
   c) The car in front decided to turn right.

2. POSSESSOR for POSSESSED / ATTRIBUTE
   a) Why is John not in the *Who is Who*?
   b) Where are you parked?
   c) Shares fell 10 per cent after Budget.

3. REPRESENTED ENTITY for REPRESENTATIVE
   a) England won the World Cup in 1966.
   b) The government will announce new targets next week.

4. WHOLE for PART
   a) I'm going to wash the car/ fill up the car with petrol.
   b) Do you need to use the bathroom?

5. PART for WHOLE
   a) There are too many mouths to feed.
   b) What we want are more bums on seats.
   c) I noticed several.

6. PLACE for INSTITUTION
   a) The White House denies allegations.
   b) The Palace defends the sackings.

10.3. IMAGE SCHEMAS

Lakoff and Johnson explain that because of our physical experience of being and acting in the world, that is, perceiving the environment, moving our bodies, exerting and experiencing force, we form the basic conceptual structures that we later use to organize thought across a range of more abstract domains. We will be studying a few schemas following Johnson (1987). These are the *containment, path* and *force* schemas.

Containment schema

According to Johnson the schema of containment derives from our experience of the human body itself as a container. It also derives from our own experience of being physically located within bounded locations like rooms, beds, etc. And, finally it also derives from the fact that we put objects into containers. The result is an abstract schema, of physical containment of an entity within a bounded location.

This idea leads to a number of conclusions that take on the form of "rules" of the kind:

1. elements are either in or out of the container
2. containment is typically transitive: "if I am **in** bed and my bed is **in** my room, then I am **in** my room"

Johnson calls implications a number of inferences, such as that the experience of containment typically involves protection from outside forces or that it limits forces, such as movement, within the container. He defines schemas as *gestalt* structures that connect aspects of our experience and lead to inferences in our conceptual structure.

Because this schema of containment can be extended by a process of metaphorical extension into abstract domains, Lakoff and Johnson have defined CONTAINER as one of a group of ontological metaphors in which our experience of non-physical phenomena is described in terms of simple physical objects like substances and containers. For example, the visual field is often conceived of as a container:

This ship is coming into view
There is nothing in sight

Lakoff and Johnson explain how a race, for example, is an event which is viewed as a discrete entity that exists in space and time and has well defined boundaries. A race thus has participants (which are objects). Events like the start and finish (which are metaphorical objects), and the activity of running (which is metaphorical substance). We can then say:

Are you in the race on Sunday? (race as CONTAINER OBJECT).

Did you see the race? (race as OBJECT).

Are you in? (in the RACE / GAME)

Activities can also be seen as containers:

I put a lot of energy into washing the windows.

She's deep in thought.

States can also be regarded as containers as in:

She is in love.

We stood in silence.

Both Lakoff and Johnson reveal the important role of metaphor in allowing us to conceptualize experience. That is, metaphor is a particular kind of abstraction.

Path schema

This schema comes from our everyday experience of moving around the world and experiencing the movements of other entities. This schema has a starting point, a sequence of contiguous locations and an end-point. There are a number of implications associated with this schema. Saeed has summarized them as follows:

- Since A and B are connected by a series of contiguous locations, getting from A to B implies passing through a the intermediate points
- Paths tend to be associated with directional movement along them; that is from A to B.
- There is an association with time. Since a person traversing a path takes time to do so, points on the path are readily associated with temporal sequence. As a result the further along the path an entity is, the more time has elapsed.

For example:

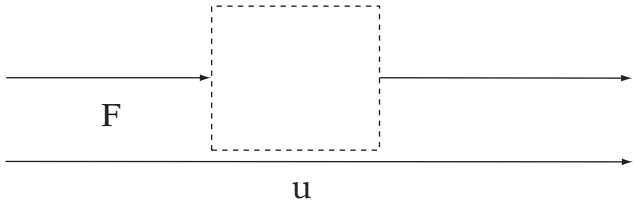
a. *She is writing her PhD thesis and she's nearly there*

b. *I meant to finish painting it last week, but I got side-tracked*

Thus the structural elements of a PATH schema are a source, a destination, a series of contiguous locations which connect the initial and end points, and a directionality. For instance, in the example of the lovers they are seen as the travellers along a metaphorical path with a starting and an end-point. As is obvious, image-schemas provide on some occasions the source domain of some metaphors. The most elaborate form of LIFE IS A JOURNEY metaphor derives from this schema.

Force schemas

Force schemas include the basic schema of Compulsion, where a vector force **F** acts on an entity **u**. A more specific schema is Blockage, where a force meets an obstruction and acts in various ways. Saeed holds that force schemas are pre-linguistic and that they shape the form of linguistic categories.



In this figure we see a force that meets an obstruction and acts either by being diverted or moving the obstacle. Additionally, the force can also pass through it.

10.4. POLYSEMY

One important application of schemas is to describe polysemy. When we find a group of related but distinct meanings attached to a word, we find polysemy. Lakoff describes a pattern produced by a metaphorical extension of meaning from a central origin and Saeed applies this concept to the explanation of two grammatical features of the English language. These are prepositions and modal verbs.

10.4.1. Prepositions and polysemy

Prepositions can be studied from the schema of containment perspective. For example in

The crack in the vase
The water in the vase

Here we can see the same preposition with different meaning. Various authors are of the idea that all different uses of prepositions are extensions of a central, ideal containment schema where the containment schema implies the inclusion of a geometric construct in one, two, or three dimensional geometric construct. Lakoff et al claim that the polysemous nature of prepositions requires a topographical approach using spatial models.

Saeed summarizes a number of studies showing how force schemas have been used to describe polysemy in modal verbs. Modal verbs, like *must, may* and *can,* typically have both deontic and epistemic senses. In the following examples we can see these modals as typically expressing obligation, permission and ability:

a. You *must* hand in your essay before the end of this week.

b. You *may* enter the studio when the light goes off.

c. She *can* swim much better than me.

In these examples taken from Talmy he proposes that a typical use of *may* as permission is an example of removing a barrier or keeping back a potential but absent barrier. Sweetser also extends this analysis of *may* where the normal use of *may* is when the barrier is a social one as in

I'll let you smoke in the car, but just for today

The force-schema analysis also applies in the use of *must* for obligation as in a. Sweetser also applies this idea when analysing the authority as a moral or religious force, as in

You must pray three times a day

and she explains that there is a conceptual link between someone pushing you in a direction and a moral force impelling you to act in a certain way and that both are forces which can be resisted or acceded to. A common conceptual schema unites the characterization of both situations. The epistemic use of modals as metaphorical extensions of deontic uses is also pointed out by Sweetser. For example *must*, in its epistemic use, expresses a reasonable conclusion in the following expressions:

a. It's dead. The battery *must* have run down.

b. You've travelled all day. You *must* be tired.

Sweetser holds that the use of modals for rational argument and judgement are derived from their uses for the real world of social obligation and permission and also that this derivation follows the usual metaphorical

extension from the external concrete world to the internal world of emotion and cognition. In this sense, the epistemic use of *may* is taken to represent the lack of a barrier in the following examples given by Saeed, where **a** can be paraphrased as **b**.

a. You may be right.

b. There is no evidence preventing the conclusion that you are right.

and where a parallel is drawn between barriers in social action and barriers in mental reasoning.

The epistemic use of *must* can also be interpreted as a compulsion force-schema where again **a** can be rewritten as **b** in the following example.

a. You must have driven too fast.

b. The evidence forces my conclusion that you drove too fast.

Here this evidence is conceptualized as a force analogous to social pressure and laws, moving a person's judgement in a certain direction. In conclusion, what Sweetser claims is that the relationship between the deontic and epistemic use of each modal is a further example of polysemy, because both are semantically related, in the sense that it is the metaphorical extension of the force and barriers schemas from the social world to our inner reasoning that relates the two modals.

We can conclude then that image-schemas are experientially based conceptual constructs by which we characterize spatial relations, for example, and which can be extended to other domains. They typically operate shifting from the external and concrete to the internal and abstract. Saeed, in turn, defines schemas as the building blocks of metaphor, allowing us to conceive mental states as containers (*She's in love*), evidence as compulsion (*He must be guilty*) or purposes as paths (A: *Have you finished the book?* B: *I'm getting there*). According to Saeed, polysemy is then the result of this extension of schemas to form radial categories.

10.5. MENTAL SPACES

We have just seen how image-schemas and their metaphorical extensions can be used to account for a number of areas in language which display polysemy. Prepositions and modal verbs are important in this respect. We have also studied how some image-schemas like CONTAINER have been found to lie at the basis of the polysemous nature of some prepositions (e.g. *in* and *over*). And how the FORCE image-schema helps to describe polysemy in modal verbs, both in their deontic and epistemic senses.

Blending theory, was first formulated by Fauconnier and Turner (1994) and it is a relatively recent development in Cognitive Linguistics. There are two important concepts in this connection: mental space and blended space. This theory provides a new explanation of metaphorical phenomena. Mental spaces are small conceptual packets that we construct for the sake of conversation. Input spaces (which include both source and target domains) provide the basic material for metaphor interpretation. This information merges in the blended space, where additional information is created. This approach is also used to account for other cognitive linguistic phenomena like metonymy, referential opacity, and presupposition.

Fauconnier's main contribution explains how language users assign and manipulate reference, including the use of names, articles and pronouns. He focuses on the cognitive processes triggered during discourse by these linguistic structures and on how speakers and hearers keep track of the entities referred to in the language. His central idea is that when we use language we are constantly constructing domains.

These domains in turn are like large areas of common reference. As an example, we take Saeed's reference to Julius Caesar. If we talk about Shakespeare's play *Julius Caesar*, we can handle several relevant domains, or mental spaces. One domain is the world of the play, while another might be the real world, where Julius Caesar is a historically documented figure. We always make use of such division into domains and we use the same name *Julius Caesar* for both the historical figure and the character in the play. The process can be made more complex if we refer to the actor playing this part and say that *Julius Caesar was too young.* And made even more complicated if, seeing some children running off the foyer's with a life-size figure of the actor in costume, we say, following Saeed's example: *Hey, they are stealing Julius Caesar.* That is, we use the same name to refer to the historical person, a role in a play written about him, an actor playing that role and a figure of that actor playing the role. Fauconier's mental spaces try to explain this kind of mental flexibility.

Saeed compares this concept with the notion of possible worlds used in formal semantics where it is assumed that the speaker can divide up reality into separate domains of reference.

10.6. LANGACKER´S COGNITIVE GRAMMAR

Langacker´s cognitive grammar is possibly one of the most influential contributions to the area of cognitive linguistics in the last twenty years. One of his main tenets is the idea that there is no distinction between

grammar and semantics. The lexicon, morphology and syntax are all considered as symbolic systems. The linguistic sign in turn is seen as a mapping or correspondence between a semantic structure and a phonological structure. Along the same lines, grammatical categories and constructions are also symbols.

Saeed argues that this approach might not sound very different from the basic assumptions of all linguists who rely on the notion of compositionality, in the sense that sentences are articulated groups of words, which in turn are sound-meaning mappings. However, Langacker is quite radical in seeing larger structures as directly symbolic in the same way as words are. Accordingly, constructions have meaning in and of themselves. He goes even further in this line of thought and holds that all levels of grammar are characterized in the same conceptual terms.

Firstly, Langacker argues that the linguistically relevant portion of our knowledge of familiar entities is open-ended and essentially encyclopaedic. And he also adds that the distinction between semantics and pragmatics is basically a matter of degree and descriptive convenience. For this author all linguistic units are context-dependent to some degree. Along these lines he adds that a context for the characterization of a semantic unit is a **domain**. Domains in turn are necessarily cognitive entities: mental experiences, representational spaces, concepts, or conceptual complexes. He also distinguishes between basic vs. abstract domains.

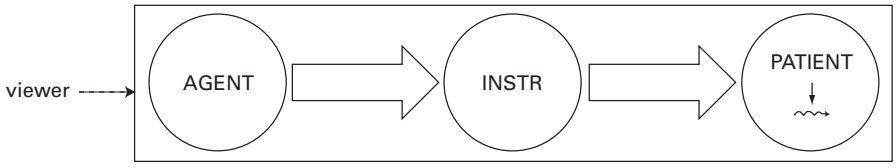
In addition, he bases his linguistic proposal on a very simple theory of reality that includes concepts of space, time, energy and matter. He calls his own way of thinking the billiard-ball model to explain the characterization of nouns and verbs as basic conceptual building blocks:

> *Aspects of the billiard-ball model correspond directly to the noun and verb prototypes: discrete physical objects are clearly prototypical for the class of nouns, and their energetic interactions for the class of verbs (Langacker: 1991: 14).*
>
> *The elements in this model are space, time, material substance, and energy. These elements are conceived as constituting a world in which discrete objects move around in space, make contact with one another, and participate in energy interactions. Conceptually, objects and interactions present a maximal contrast, having opposite values for such properties as domain of instantiation (space vs. time), essential constituent (substance vs. energy transfer), and the possibility of conceptualizing one independently of the other (autonomous vs. dependent). Physical objects and energetic interactions provide the respective prototypes for the noun and verb categories, which likewise represent a polar opposition among basic grammatical classes.* (Langacker: 1991: 283).

These categories of noun and verb are thus characterized in terms of a conceptual partitioning of reality. Nouns are described in terms of time-stable states and can also refer to processes or interactions normally described as verbs such as in *his arrival among us* or *dieting is bad for you*. Langacker also emphasizes that the condition of something being a noun is not being objectively out in the world but a product of cognitive process and communicative decision.

The characterization of verbs starts from the characterization of the prototypical transitive clause. It is described from the point of view of a speaker who wants to communicate a description of an event or scene. This speaker has to differentiate between the occurrence and the setting; establishes a vantage point of view; determines what type of entities are to be interpreted as participants and identifies forms of interactions. If we consider the viewer outside the setting and consequently as a non-participant this makes him a third-person report of an event. The viewer thus identifies three elements in an action chain: an asymmetrical relation where energy is transmitted from one entity to a second entity, and possibly to a third.

Saeed has selected the description of Langacker's prototypical event scheme as the starting point to further explain some of the more important contributions in Langacker's cognitive grammar. The prototypical event scheme can be characterized as follows:



In this schema the viewer is outside the setting because he is not a participant, but as mentioned above, he is a third-person reporter of the event. In this role the viewer identifies the above-mentioned three elements in the action chain. In this figure the energy transfer is shown by means of a double-shafted arrow, and a wavy arrow in the patient represents the change of state that the entity has experienced as a result of the interaction. This is the prototypical case where energy originates with an AGENT and ends with a PATIENT by means of an intermediate entity which is the INSTRUMENT.

The next important concept in the description of scenes is the active participation of the speaker in the construction of such a scene. Langacker defines the speaker's active characterization of scenes using the conventional conceptualization of language and he terms this concept

CONSTRUAL. One of the most important contributions of Langacker's cognitive grammar is precisely this idea that speakers can construe a scene in alternative ways.

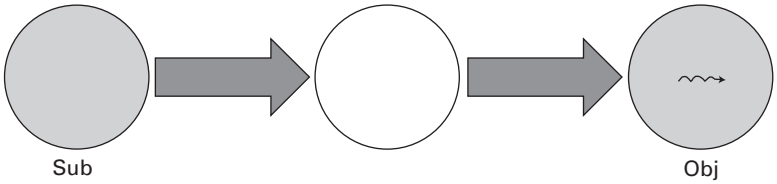
Profiling

One type of construal is profiling. Langacker defines this concept as the process of assigning prominence to certain elements of a scene. Within the action chain the speaker can choose to highlight certain aspects of the chain of action. Langacker proposes the following example to illustrate how within the action chain the speaker can choose to profile certain aspects of the chain as shown in the following three sentences:

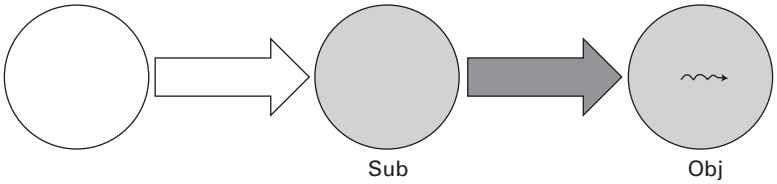
a. Floyd broke the glass with the hammer.

b. The hammer broke the glass.

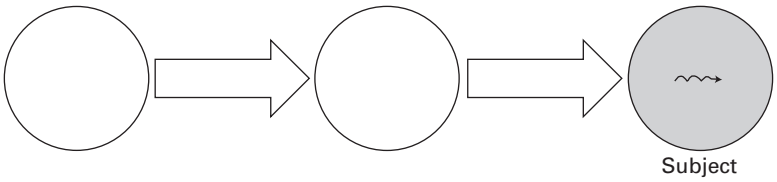
c. The glass broke.



In *Floyd broke the glass with the hammer,* the whole chain is profiled.



In *The hammer broke the glass*, both the subj. and the obj. are profiled.



In *The glass broke*, only the subject is profiled.

Here Langacker proposes his own version of the mapping hierarchies that relate thematic roles, grammatical relations and syntactic structures

as action chains. Although other authors have offered a similar analysis (Dawty, 1991; Dik, 1989; Fillmore, 1968) it was Langacker the one who developed this notion in an extensive way.

Another notion also related to the speaker's construction of the scene is the notion of **perspective**. In Langacker (1987) this also includes the notions of **viewpoint** and focus.

Saeed relates the notion of perspective to the importance cognitivists give to the role of observer in scenes, especially to the selection of the observer's viewpoint and the choice of elements to focus on. For example, the concepts of **Figure** and **Ground** (also present in Talmy, 1975,1985). Figure (also called **trajector**) is an entity chosen to stand out from the background, that is the ground (also called **landmark**). In motion events such as verbs of movement, the entity which is moving with respect to a stable background tends to be the figure. Saeed explains how the choice to focus on either Figure or Ground in a scene can have lexical consequences. Talmy's example shows the choice between the verbs *emanate* and *emit* as follows:

a. The light *emanated* from a beacon (figure as subject)

b. The beacon *emitted* light (ground as subject)

In this example Talmy argues that choosing **a** reflects a choice of focus on figure whereas choosing **b** shows a focus on ground.

Sometimes, the choice of focus involves not only separate verbs but also different argument structure for the same verb such as in the following examples given by Saeed:

a. The bees swarmed in the field

b. The field swarmed with bees

or in

a. The ice glistened in the moonlight

b. The moonlight glistened on the ice

Scannig

One final process of construal proposed by Langacker is scanning. In scanning, speakers are able to structure a scene in order to form a description. There are two kinds of scanning: sequential scanning and summary scanning, depending on the way a reporter may construe a scene. In sequential scanning, a process is viewed as a sequence of component sub events. In summary scanning, the process is seen as an integrated whole. Langacker argues that this difference is reflected in grammar in a

number of ways, such as the speaker's decision to use a noun or a verb to describe an event. He explains how someone going into a room or falling off a cliff can be viewed in sequential mode and described using a verb as in examples **a** below or can be viewed in summary mode and described using nominals as the **b** versions of the same scene.

a. Keegan entered the room.
b. Keegan's entrance into the room.

a. Wheeler fell off the cliff.
b. Wheeler's fall from the cliff.

Langacker uses an analogy to highlight this difference between modes: sequential scanning is like viewing a motion picture sequence, while summary scanning is like viewing a still photograph. Cognitive semantics thus gives a lot of importance to the role of the speaker's construction of a situation in determining meaning.

SUGGESTED READINGS

— For a summary of most topics in this lesson, see Cruse (2000: 202-214).

— For all the topics dealt with in this lesson, see Saeed (2001: 302-328; 2003: 342-384).

ANNOTATED REFERENCES

JOHNSON, M. 1987. *The Body in the Mind: The Bodily Basis of Meaning, Reason, and Imagination*. Chicago: Chicago University Press.

This book is a must for anyone interested in the embodied nature of meaning, that is, image-schemas. The author provides clear and insightful explanations for the main concepts and studies some image-schemas like CONTAINER or FORCE.

LAKOFF, G. 1993. The contemporary theory of metaphor. In Ortony, A. (ed.), *Metaphor and Thought*. 2nd ed. Cambridge: Cambridge University Press, 202-251.

Here Lakoff develops the central tenets of cognitive semantics in connection with the analysis of metaphor.

LAKOFF, G. and JOHNSON, M. 1980. *Metaphors We Live By.* Chicago: Chicago University Press.

This is an atractive and easy to read work. It is very accessible and provides clear explanations and examples.

LAKOFF, G. and JOHNSON, M. 1999. *Philosophy in the Flesh. The Embodied Mind and its Challenge to Western Thought*. New York: Basic Books.

This book is more difficult than the previous one for the beginner since it is more philosophical in nature.

LAKOFF, G. and TURNER, M. 1989. *More than Cool Reason. A Field Guide to Poetic Metaphor.* Chicago: Chicago University Press.

Lakoff and Turner here analyze metaphorical examples mainly taken from literary discourse on the grounds that poets have the same resources as ordinary people in order to build metaphorical uses. The only difference is that the authors exploit them from a literary perspective.

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A basic, essential reference.

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EXERCISES AND ACTIVITIES

1. Analyze the following metaphors from the point of view of Cognitive Linguistics:
   a) John is a pig.
   b) Time is money.
   c) She spends her time unwisely.

   Are the two last metaphors related in any way?

2. Identify the different image-schemas involved in the following expressions and analyze them by identifying the structural elements and points of internal logic which are exploited in each of the following expressions:
   a) He is full of hate.
   b) She was in love.
   c) His job offer opened up new paths for me.
   d) Something about him drew me to him.

3. Investigate the metaphorical representation of emotional states such as fear and depression.

4. Identify the metaphors which appear in the following paragraphs and analyze them (adapted from Cruse, 2000: 215-216, 2004: 213-214).
   a) I had a quick bowl of soup with Henry and then downed half a pot of coffee, managing in the process to offset my lethargy and kick into high gear again. It was time to make contact with some of the principals in the cast.
   b) The hotel's air conditioning, which was fitful at best, seemed to drone off and on in a fruitless attempt to cut into the heat.
   c) I was aware of the yawning three-storey drop, and I could feel my basic dislike of heights kick in.
   d) His name was being withheld from the local papers because of his age.
   e) I rolled out of bed, pulled on my sweater, brushed my teeth and combed my hair, avoiding the sight of my sleep-smudged face
   f) He was mortgaged to the eyeballs, so his house wasn't worth a cent.
   g) Steep hills, pleated with erosion, rose up on my left, while to the right, the heaving grey Pacific was pounding against the shore.

5. With the aid of a dictionary or of any other means, write as many metaphors for expressing happiness and sadness as possible. Do it in English and Spanish and compare them by pointing out their similarities and differences in conceptualization.

6. Write sentences in which the prepositions *in*, *on*, and *over* are included. Write at least three different polysemous uses for each of these prepositions and say which image-schema each of these uses is an extension of.

7. Explain the following metonymies:

   a) We need a couple of good brains here.

   b) She's just a pretty face.

   c) She's a walking computer.

KEY TO THE EXERCISES

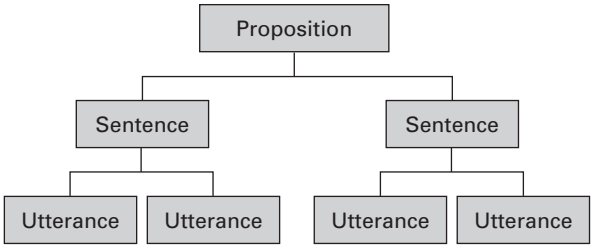
Lesson 1. BASIC CONCEPTS

1.

	Utterances	Sentences	Propositions
Can be loud or quiet	+	–	–
Can be grammatical or not	+	–	–
Can be true or false	+	+	+
In a particular regional accent	+	–	–
In a particular language	+	+	–

2 & 3. Yes. The abstract content of a proposition can be realized by different sentences. Yes. The same sentence can be realized by different utterances.

It is useful to envisage the kind of family tree relationship between these notions shown in the diagram. For example, a single proposition



could be expressed by using different sentences (say *The Monday Club deposed Mrs. Thatcher,* or *Mrs. Thatcher was deposed by The Monday Club*) and each of these sentences could be uttered an infinite number of times. A proposition is an abstraction that can be grasped by the mind of an individual person. In this sense, a proposition is an object of thought. Do not equate propositions with thoughts, because thoughts

are usually held to be private, personal, mental process, whereas propositions are public in the sense that the same proposition is accessible to different persons: different individuals can grasp the same proposition. Furthermore, a proposition is not a process, whereas a thought can be seen as a process going on in an individual's mind. Unfortunately, of course, the word *thought* may sometimes be used loosely in a way which includes the notion of a proposition. For instance, one may say, "The same thought came into both our heads at the same time". In this case, the word *thought* is being used in a sense quite like that of the word proposition. The relationship between mental processes (e.g. thoughts), abstract semantic entities (e.g. propositions), linguistic entities (e.g. sentences), and actions (e.g. utterances) is problematic and complicated.

4.

a) sense

b) reference

c) reference

d) sense

5.

a) His left eye /The eye of the needle.

b) My left foot hurts very badly / The foot of the hill.

c) Put this hat on your head / The head of the department left the room.

Eye.

Sense 1: *"eye 1":* One of the two organs on the face of a person, e.g.: The woman has a swollen eye.

Sense 2: *"eye 2":* The eye of a needle is a small hole at one end of it which the thread passes through. e.g.: The eye of this needle is not big enough for this cotton.

Foot

Sense 1: *"foot 1":* Your foot is the part of your body that is at end of your leg. e.g.: He kept on running in spite of the pain in his foot.

Sense 2: *"foot 2":* The foot of something is the part at the bottom or base of it. e.g.: We camped at the foot of some hills.

Sense 3: *"foot 3":* A foot is a unit for measuring length, equal to 12 inches or 30.48 centimetres. e.g.: We were only a few feet away from his house.

Head

Sense 1: *"head 1":* The head is the part of your body that has your eyes, mouth, brains, etc. in it. E.g.: She put her hat on her head. He sook his head.

Sense 2: *"head 2":* The head of something is the top or most important part of it. E.g.: The head of the department has called a meeting today.

6. a) Yes. In this expression, 'a man' is a nominal used to refer to an individual entity; therefore, it is a referential expression. (Saeed, pp. 12-26-27).

6. b) No. In this expression, the nominal has a generic interpretation. (Saeed, p. 26).

7.

	Content meaning	Relational meaning
Submarine	X	
After		X
Between		X
Subtle	X	

Lesson 2. SEMANTICS AND RELATED DISCIPLINES I

Soluciones

1.

Relations	Entities involved
a) 'has bought'	my mother, a book
b) 'gave'	John, Mary, a present
c) 'borrowed'	she, a book, the library
d) 'taller than'	Jack, Mary

2. a) John is tall b) John lent a book to Mary c) The company sent John to Japan

3. a) be beautiful (she)
   b) be tall (Mary, her sister)
   c) give (John, Mary, a book)
   d) give (Mary, John, a book)

Lesson 3. SEMANTICS AND RELATED DISCIPLINES

1. The statement:

   Under normal conditions, if one heats water up to 100 degrees Celsius, water becomes vapour is

   e) an analytic truth

   f) a synthetic truth

   g) a necessary truth

   h) a contradiction

2. Why do we know that the statement "She died yesterday but she is still alive" is false?

   e) because it is an analytic statement

   f) because it is a synthetic statement

   g) because it is an empirical fact

   h) because we know «her»

3. Translate the following predicate-argument structures into English.

   a) John is tall

   b) John lend a book to Mary

   c) The company sent John to Japan

4. Now translate the following sentences into predicate-argument notation.

   a) Beautiful (She)

   b) Taller (Mary, her sister)

   c) Give (John, Mary a book)

   d) Give (Mary, John a book)

5. Re-write the following as predicate-argument formulas using quantifiers

   a) ∀x sad (x)

   b) ∃x sneeze (x)

   c) ¬∃x cry (x)

   d) ¬∃x like (x: maría)

Lesson 4. SEMANTICS AND RELATED DISCIPLINES II

1. Which of the following verbs are declaratives?: apologize, **authorize** (borderline declarative), argue, **condemn,** squeal, **resign, sentence, consecrate, bid,** explain, notice.

2. The following interchange

   Are you coming home for Christmas?

   I don't have paid holidays yet

   is an example of

   a. conversational implicature

   b. implicational conversation

   c. conversation mistake

   d. conversational failure

3. The following speech act

   Congratulations on having passed the bar

   is:

   a. expressive

   b. commissive

   c. representative

   d. directive

4. Explain the deictic properties of the following verbs:

   Bring, take, fetch, come, go, return.

   They lexicalize a point of reference, from the point of view of the speaker. *Bring* lexicalizes a movement, from a point of reference or departure, which starts away from the speaker, whereas *take,* lexicalizes a movement from a point of reference that is in the actual position of the speaker. In the same vein, *come* and *go,* lexicalize different points of reference: the actual position of speaker and the focal position. *Fetch* and *return,* both lexicalize a double trajectory.

   Summing up, all these verbs have a deictic component. That is, they all lexicalize the movement of something or someone, from the point of view of the speaker. Both expressions *Come here!* and *Go there!*, may describe exactly the same displacement of a person. They are

only been expressed by different speakers, located at different positions, in relation to the addressee.

All these verbs encode an element of movement and directionality of such movement.

5. Explain the relations between the concept of *deixis* and the concept of *reference*.

   This has to do with the difference between constant versus variable reference.

6. Which of the following is the implicated premise and which one the implicated conclusion?

   A: Am I in time for supper?
   B: I've cleared the table

   This expression is only understandable in a concrete context. Since the answer to question is not a direct one, it implies "NO, you are not in time for dinner" (implicated conclusion) SINCE "I've already cleared the table" (implicated premise). This will be studied in more detail later in the year in relation with implicatures.

7. a

Lesson 5. PARADIGMATIC RELATIONS

1. Examples of polysemy: When he arrives at a fork in the road he always gets lost. *They are not polite at all. They never use their forks and knives when they have lunch.*

   Examples of homonymy: (it could be also argued that these two senses are related and so are cases of polysemy, as claimed by Saeed, 2001: 65). *He only buys shoes with rubber soles* (bottom of shoe). *He likes eating some sole for lunch* (kind of fish).

   polysemy: *She tugged her father's coat tail. That dog has a very long tail.*

   homonymy: *He wanted to play baseball, but he did not have enough money to buy a baseball bat. She does not like bats, because of their disgusting appearance and habits.*

   This taxonomy could be expanded by adding more levels of specification. Here only the most relevant ones have been introduced.

1.

	pig	
sow	hog	piglet

	virtue	
honesty	decency	simpathy

	tree	
beech	fir	oak

2. Say which of the following are examples of meronymy:

   a. belt/ buckle

   b. valiant /intrepid.

   c. fork/ prong.

   d. door/ hinge

   e. silly/ dum

   f. jacket / lapel

4. Basic-level categories: pencil, fork, grass, bus, stool, supermarket, park, street, road, building, water.

3. a, b, c, polisemy

   d homonymy

4. b

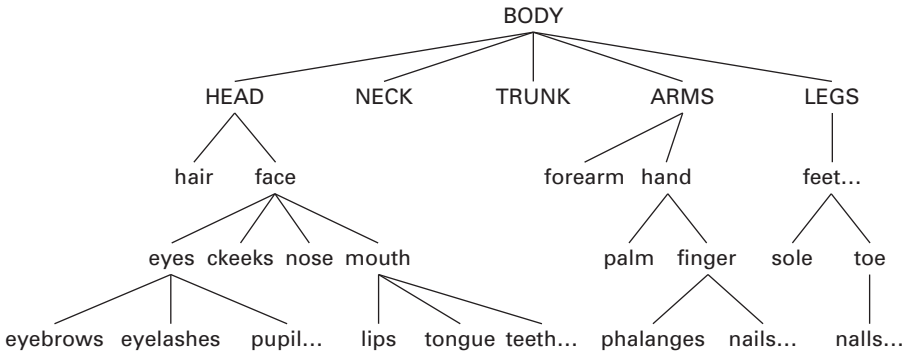
5. Give a list of components of the following words: skirt, book, cottage, teaspoon, violin, dream(v), kiss (v)

Key:

skirt	object, clothing, worn by women, on lower part of body, attached to the waist, legs not individually covered, normally visible
book	object, serves as a locus of text, has many pages bound together, has cover, not part of an indefinite series appearing at irregular intervals
cottage	object, dwelling, small, permanent, stone or brick
teaspoon	object, implement, cutlery, with cup-shaped concavity at one end, for adding sugar and stirring tea in a cup
violin	object, musical instrument, stringed, played with a bow, lowest note: G below middle C
dream (v)	process, mental, during sleep, experiences unreal events
kiss (v)	Action, physical, intentional, apply lips to something, functions as a conventional signal

Lesson 6. PARADIGMATIC RELATIONS II

1.



2. Scissors: (by means of the suffix -s) two units.
Cattle: indeterminate quantity of units (animals).
Oats: indeterminate quantity of mass.
Bellows: two symmetrical parallel units.
Crowd: indeterminate quantity of units (people).

3.

3.1. *Crimson* is a hyponym *of red*.
3.2. *Slapped is* a hyponym of *hit*
3.3. *Lurched is* a hyponym *of walked*.
3.4. *Tore* is a hyponym of *cut up*.

4. Criket ball, size, net, service, fault.
5. Bachelor: [+ human] [+ adult] [+ male] [+ unmarried]. Spinster: [+human] [+ adult] [- male] [+ unmarried]. Cat: [+ feline] [- fierce]. Tiger: [+feline] [+ fierce] [+ male]. Tigress: [+feline] [+ fierce] [- male]
7. a, b, c, f: unbounded; d, e, g: bounded.
8. The following monopolar chain (egg, larva, pupa, butterfly) is an example of:
   a) degree
   b) stage
   c) sequence
   d) rank

   (Ver Saeed, 2004: 185)

Lesson 7. SYNTAGMATIC RELATIONS I

1. a) Arguments: John (obligatory), the door (obligatory), with a key (optional).
   b) Arguments: the key (obligatory), the door (obligatory).
   c) Argument: the door (obligatory).

2.

a. States: know, believe, desire, love, hate, want.
b. Activities: (unbounded processes) Drive a car, run, swim, push a cart.
c. Accomplishments: (bounded processes). Recover from illness, grow up, run a mile, walk to school, deliver a sermon, draw a circle, paint a picture.
d. Achievements: (point events). Spot someone, reach the top, win the race, stop.

3. The difference is related to the state of affairs each of these sentences expresses: while the former is an accomplishment, the latter is a state.

   Know has a resultative character since someone knows something after a process of learning. This is the reason why it cannot be used in the progressive form.

4. The workmen spoiled the carpet with their boots.
   Spoil (w, c, b)
   The boots spoiled the carpet
   Spoil (b, c)

5. Solution: x BOIL 2 y / x CAUSE (y BOIL 1)

   In the first sentence, *boil* has one argument, while in the second it appears as a two-place predicate (it has two arguments).

Lesson 8. SYNTAGMATIC RELATIONS II

1.

   a. Mary: agent; the film: (objective) theme
   b. on the table: locative (goal)
   c. You (agent)
   d. the river: locative (goal) path
   e. a hole: factive (patient); it: objective
   f. London: locative (source)
   g. The storm: instrument (force)
   h. John: dative (benefitiary).

2. Modal verbs convey epistemic modality, that is, the speaker's attitude towards what is being said.
   a) Low probability of the truth of the proposition expressed.
   b) Medium probability of the truth of the proposition expressed.
   c) High probability of the truth of the proposition expressed.
   d) Median probability of the truth of the proposition expressed.
   e) Low probability of the truth of the proposition expressed.

Lesson 9. AN INTRODUCTION TO COGNITIVE SEMANTICS

1.

	Classsically	Prototypically
bycicle	X	
love		X
green	X	
explanation		X

2. Robin: [+ bird] [+ sing] [+ fly] [+ feathers] [+ tail] [+ red neck]
   Ostrich: [+bird] [- sing] [- fly] [+feathers] [- tail]
   Bachelor: [+ male] [+ single] or [- female] [- married]
   Spinster: [+ male] [+ single] or [- female] [- married]
4. Basic level categories:

   SANDAL, SEAGULL, DAISY GRASS, BULLDOZER, BUS, SUGAR, DELI(CATESSEN), SUPERMARKET, PETROL STATION, TOWN HALL, MOTORWAY, ROAD, PARK, CANAL, POLICE STATION, WINE, MILK.
5. Illustration 8, 9 and 10: prototypically. Illustration 11: clasically.
6. Bullets shot don't follow the laws of gravity. Il wont fit and ICM of shooting.

Lesson 10. COGNITIVE STRUCTURES

1. a. John is a pig. Linguistic metaphor belonging to the conceptual metaphor PEOPLE ARE ANIMALS. A salient feature of pigs, their dirtiness, is made to correspond with John's dirtiness.
   b. Time is money. Time is conceptualized as money. It is implied that you must not waste time.
   c. She spends her time unwisely.

   In *b* Time is seen as money again and in *c* a woman wastes it unwisely.

Are the two last metaphors related in some way?

Both metaphors are linguistic realizations of the conceptual metaphor TIME IS MONEY. In this case, one of the linguistic realizations coincides with the general conceptual metaphor.

2. a. He is full of hate. The CONTAINER image-schema is involved in this expression. A person is conceptualized as a container and hate is mapped onto contents of such a metaphorical container. Whoever is full of hate will act accordingly since the entities inside the person will affect her behaviour. This expression belongs to the conceptual metaphor PEOPLE ARE CONTAINERS.
   b. She was in love. The CONTAINER image-schema underlies this expression. In it, a person represents the contents of a figurative container, love. This expression belongs to the more conceptual metaphor EMOTIONS ARE CONTAINERS. The person will behave in

a particular way since she will be affected by the conditions imposed by the emotion, love.

c. His job offer opened up new paths for me. The PATH image-schema is involved in this expression. A job offer acts as a force which causes someone to metaphorically move towards a given direction. The new paths are new opportunities which the subject who is figuratively moved is offered. The job offer is a trajector or moving entity which causes another entity, a person, another trajector, to move. These paths are supposed to lead the subject somewhere, which is related to the achievement of some goal.

d. Something about him drew me to him. The FORCE image-schema underlies the construal of this expression. More precisely, it is the kind of force that we call attraction that is involved in this metaphor. There exists a force, *something about him,* which makes the trajector, *me,* to move towards the destination, the other subject (*him)*.

4. a) metonymy
   b) metaphor
   c) metaphor
   d) metaphor
   e) metaphor
   f) metaphor
   g) pleated with erosion: metaphor
   the hills rose up: metonymy
   the heaving gray Pacific: metaphor

7. Explain the following metonymies:

   a. We need a couple of good brains here. BRAIN FOR INTELLIGENT PERSON. A part of a person, the brain, stands for an intelligent person since the brain is the part where the intellect is thought to reside.

   b. She's just a pretty face. Part of a person stands for a whole person. This metonymy singles out an outstanding characteristic of a woman: her beauty. It is implied that the only feature which is worth mentioning concerning this woman is her beauty.

   c. She's a walking computer. She is so clever that she is like a walking computer.

Basic Semantics va dirigido a aquellas personas interesadas en el estudio del significado en general y del léxico inglés en particular. En una primera parte se introducen los conceptos básicos en los que se apoya el análisis semántico enmarcándolo en el contexto de las tendencias generales del pensamiento lingüístico contemporáneo. También los estudios semánticos se relacionan con otras disciplinas afines, como la lógica o la inteligencia artificial. Posteriormente, se estudian los aspectos más genuinamente semánticos, especialmente desde el punto de vista de las interrelaciones entre la gramática y el léxico. A continuación, se introduce la dimensión cognitiva del significado y, finalmente, se abordan las aplicaciones del significado en relación con la representación del conocimiento (diccionarios y ontologías) y el estudio del corpus como una herramienta fundamental en el estudio empírico del significado.

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UNED Editorial

colección Grado

ISBN: 978-84-362-6243-8

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