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The interpretation of multilingual tax treaties

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CHAPTER 2 – SEMANTIC ANALYSIS

1. Language as means of communication

“Without language we cannot influence other people in such-and-such ways; cannot build roads and machines, etc. And also: without the use of speech and writing people could not communicate.”⁴⁰

Language: means of communication among human beings.⁴¹

This is a possible definition of language, one that highlights its purpose, the reason why it was born and is used.

Every time human beings communicate with each other, some kind of language is used.⁴² Therefore, as long as it proves true that man by nature is a social (politikos) animal, as Aristotle maintained as early as in the IV century B.C.,⁴³ language represents the most fundamental of human inventions. One could aphoristically argue that without language there would be no human beings.

The above-mentioned use by Aristotle of the term “politikos”, from which the English term “political”, the Italian “politico”, as well as many other terms, etymologically derive, gives the author the opportunity to highlight the obvious: language is also the means used by human beings to agree upon, set and communicate the rules that regulate the social life (i.e. to conduct politics) and to administer and verify the correct application and respect of those rules. Therefore, without language there would be no law either.

Since the present study concerns a small part of the law universe, the author thought it necessary to very briefly clarify in his mind the way language functions and whether many of the ideas he ordinarily took for granted with reference thereto continue to hold true where analysed with a more critical attitude.

Understanding how language works out and, more importantly, how and in which situations it does not work out as expected, is the best first step in the path of studying

⁴⁰ L. Wittgenstein (translated by G. E. M. Anscombe), *Philosophical Investigations* (Oxford: Blackwell, 1953), p. 116, para. 491.

⁴¹ A semantically equivalent definition is “language as a system for the expression of thought”, whose underlying idea is rooted in early philosophy, e.g. in Heraclitus among pre-Socratic philosophers (see, for example, fragments III and IV reported in C. H. Kahn, *The Art and Thoughts of Heraclitus: an edition of the fragments with translation and commentary* (Cambridge: Cambridge University Press, 1981), pp. 28-29).

⁴² It is not relevant here to discuss what kind of signs could or should be considered to be “language”. What is relevant, for the purpose of the present study, is that natural languages used in the day-to-day communication by human beings (e.g. the English language, the Italian language, the Arabic language) are considered “languages”.

⁴³ Aristotle, *Politics*, Book I (see Aristotle (translated by B. Jowett), *Politics* (The Internet Classics Archive) – available online at <http://classics.mit.edu/Aristotle/politics.html>).

and researching on law.

As language is a means of communication, its primary function is to convey meanings. This function is performed by combining the meanings encapsulated in *listemes* into the complex meanings of phrases, clauses, sentences and longer texts according to agreed grammatical rules.⁴⁴ A listeme may be defined as a language expression whose meaning is not determinable from the meanings (if any) of its constituent forms (i.e. its graphic and phonological components) and which, therefore, a language user must memorize as a combination of form and meaning.⁴⁵ Such a combination of form and meaning that determines a listeme is typically that found in dictionaries and corresponding to an independent lexicon entry⁴⁶ (e.g. the lexicon entry for the listeme “red”, or that for the listeme “-s” in an English dictionary).

Therefore, from a *structural perspective*, meaning is compositional:⁴⁷ any complex language expression can be analysed in terms of simpler constituent expressions down to:

- (i) the semantic components of listemes and
- (ii) the grammatical structures that combine them (i.e. syntactical and morphologic structures).⁴⁸ Language users combine listemes into words, phrases, clauses, sentences, constructing new meanings at each level of aggregation.⁴⁹ For example, the meaning of the word “books” is composed of:

- (i) the meanings of the listemes “book” and “-s” and
- (ii) the morphosyntactic relationship between the two listemes.

Similarly, the meaning of the noun phrase “old books” is composed of:

- (i) the meaning of the adjective listeme “old” and the compound meaning of the word “books” and
- (ii) the syntactic relationship between those two words (“old” restricts the

⁴⁴ K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), p. 254.

⁴⁵ K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), p. 6.

⁴⁶ For each lexicon entry, dictionaries usually include, in addition to the “forms” and the “semantic (meaning) specifications”, the rules of syntax associated with the specific listeme, i.e. its “morphosyntactic specifications”; in particular, dictionaries include information relating to the morphosyntactic class of the listeme (e.g. its type - verb, noun, adjective, etc. -, its paradigm - conjugation, declension -, its gender, etc.) and certain irregular rules of morphosyntactic peculiar of the specific listeme (e.g. irregularities, as compared to the general rule, in conjugating a verb in German). Therefore, dictionaries generally include three types of information for each entry: (i) its formal specifications (graphic form, phonological specification); (ii) its semantic specifications (meaning); (iii) its morphosyntactic specifications.

⁴⁷ See Frege’s principle of compositionality as expressed in L.T.F. Gamut, *Logic, Language, and Meaning. Vol. 1. Introduction to Logic* (Chicago: Chicago University Press, 1991), p. 15 as follows: “[E]very sentence, no matter how complicated, can be seen as the result of a systematic construction process which adds logical word one by one”.

⁴⁸ H. Kamp and B. Partee, “Prototype theory and compositionality”, 57 *Cognition* (1995), 129 *et seq.*, at 135-136; K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), pp. 6-7; G. Sandu and P. Salo, “Compositionality”, in K. Allan (ed.), *Concise Encyclopedia of Semantics* (Oxford: Elsevier, 2009), 117 *et seq.*

⁴⁹ On the different functions of words and phrases and on the formation thereof see L. Bauer, *English Word-Formation* (Cambridge: Cambridge University Press, 1983), p. 142.

reference of the head noun “books” to a subset of books).⁵⁰

From a *causal perspective*, on the other hand, meaning appears to be cognitively and functionally motivated.⁵¹ It is cognitively motivated since the categories and structure of language reflect the way human beings perceive and conceive of the world(s).⁵² It is functionally motivated since the categories and structure of language are motivated by their actual uses. In fact, the social-interactive function of language has determined a heavily reliance on extra-utterance elements (i.e. elements external to the sentence written or spoken) in order to convey (for the speaker) and understand (for the hearer) the intended meaning, such as common ground, common principles on behavior when communicating (the “cooperative principle”), implicatures and inductive inferences from shared general and specific experiences. This confirms that language normally provides a set of *underspecified clauses that need to be expanded* by semantic and pragmatic inferences based on the awareness of the lexicon and grammar (morphology and syntax) and heavily reliant on common ground, in particular *encyclopedic knowledge* (i.e. information supposedly available to the specific hearers and speakers on all branches of knowledge) and relevant conventions for language use.⁵³

An extreme vision (and correlated explanatory model) of the relations existing between language, its functioning and the way human beings perceive and conceive of the world(s) has been expressed in the well-known Sapir-Whorf hypothesis. According to this hypothesis, no single “real world” exists, since its representation is to a large extent unconsciously built on the language habits of the various communities of human beings. Since no two languages are ever sufficiently similar to be considered to represent the same social reality, also the worlds in which different societies live are distinct worlds, not merely the same worlds with different labels attached.⁵⁴ To put it differently, users of markedly different grammars are pointed by such grammars towards different types of observations and different evaluations of externally similar acts of observation and, therefore, are not equivalent as observers and must arrive at somewhat different views of the world.⁵⁵

Although not endorsing the Sapir-Whorf hypothesis and not relying on it for the purpose of the present study, the author finds it interesting to recall that hypothesis as additional

⁵⁰ Compare with the example of the noun phrase “young bachelors” given in K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), p. 6.

⁵¹ According to Wittgenstein, the need determines the use of the language, which entails that the need determines the language, since the language is nothing other than its use (“(...) doesn’t the fact that sentences have the same sense consist in their having the same use?”) (see L. Wittgenstein (translated by G. E. M. Anscombe), *Philosophical Investigations* (Oxford: Blackwell, 1953), p. 8, para. 20).

⁵² Not just the real present world, but also any kind of hypothetical, past, future, abstract world.

⁵³ K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), p. 475.

⁵⁴ E. Sapir, “The status of linguistics as a science”, in E. Sapir (ed. D. G. Mandelbaum), *Culture, Language and Personality: Selected Essays* (Berkeley: University of California Press, 1949), 160 *et seq.*, at 162.

⁵⁵ B. L. Whorf, “Linguistics as an exact science”, in B. L. Whorf (ed. J. B. Carroll), *Language, Thought, and Reality: Selected Writings* (Cambridge: MIT Press, 1956), 220 *et seq.*, at 221, who speaks of “linguistic relativity principle”.

evidence of how linguists have recognized, substantially without significant deviations, that language, its functioning and human perception and conception of the worlds are strongly interconnected and influence each other. This shows, if needed, that a study on the interpretation of specific legal texts (tax treaties), which results in a study of human perceptions and conceptions of a particular intellectual world (law of treaties) and of its impact on human relations, cannot be logically and coherently carried out without attributing an appropriate relevance to the linguistic aspects thereof.

By expanding the general considerations put forward in this section, this chapter focuses on certain aspects of semantics and pragmatics,⁵⁶ cumulatively intended as the study of meaning in human languages, i.e. the analysis and representation of the meaning of linguistic expressions, of their constituents, as well as of the meaning-relations between them.⁵⁷ The study will be limited to those aspects of semantics and pragmatics that the author considers relevant in order to better analyse and theoretically systematize the core issues of the present research (issues arising in the interpretation of tax treaties, with specific regard to multilingual tax treaties). In doing so, the author will use semantics metalanguages⁵⁸ as little as possible in order to make this part of the study more intelligible for readers lacking a background in linguistics. Where words and expressions characteristic of semantics metalanguages will be used, the author will provide the reader with definitions and examples thereof, unless such words and expressions have the very same generally recognized meaning in the day-to-day English language.

2. Learning and using language: the relation between listemes and concepts

2.1. Introduction

⁵⁶ Both semantics and pragmatics concern the meaning of linguistic expressions, but they do it from slightly different perspectives. Quoting the incipit of Jaszczolt's *Semantics and Pragmatics*, "semantics pertains to the meaning of words and sentences; pragmatics pertains to the meaning of utterances, or speaker meaning. (...) pragmatics take the interlocutors, the speaker and the hearer, as the focus of attention, whereas semantics focuses on linguistic expressions. Pragmatics is a study of how hearers add contextual information to the semantic structure and how they draw inferences from what is said. The distinction between these two sub-disciplines of linguistics has standardly been founded on the context of the discourse; pragmatics has been claimed to study the contribution of the context (that is linguistic and situational context) to the meaning. But this is not a successful foundation for differentiating between the two. (...) semantics has also to make use of contextual clues and enrich the information provided by words and grammatical constructions. Hence, both semantics and pragmatics make use of context to a smaller or greater degree: the two fields are not disjoint." (see K. M. Jaszczolt, *Semantics and Pragmatics, Meaning in Language and Discourse* (London: Longman, 2002), p. 1). In the present study, both semantics and pragmatics issues are dealt with. Moreover, in light of the strict relation existing between the two, the author decided to use the term "semantics" in a broad sense, i.e. as also encompassing pragmatics. This approach is consistently applied hereafter, unless otherwise stated.

⁵⁷ K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), pp. 5-6.

⁵⁸ Semantics metalanguages may be defined as artificial or natural languages (including technical vocabulary) used by linguists in order to analyse and describe the subject of their semantic studies, i.e. natural languages (e.g. the French language, the German language, etc.).

“Et memini hoc, et unde loqui didiceram, post adverti. Non enim docebant me maiores homines praeberentes mihi verba certo aliquo ordine doctrinae sicut paulo post litteras, sed ego ipse mente, quam dedisti mihi, Deus meus, cum gemitibus et vocibus variis et variis membrorum motibus edere vellem sensa cordis mei, ut voluntati pareretur, nec valerem quae volebam omnia nec quibus volebam omnibus. Prensabam memoria, cum ipsi appellabant rem aliquam et cum secundum eam vocem corpus ad aliquid movebant, videbam, et tenebam hoc ab eis vocari rem illam, quod sonabant, cum eam vellent ostendere. Hoc autem eos velle ex motu corporis aperiebatur tamquam verbis naturalibus omnium gentium, quae fiunt vultu et nutu oculorum ceteroque membrorum actu et sonitu vocis indicante affectionem animi in petendis, habendis, reiciendis fugiendisve rebus. Ita verba in variis sententiis locis suis posita et crebro audita quarum rerum signa essent paulatim colligebam measque iam voluntates edomito in eis signis ore per haec enuntiabam. Sic cum his, inter quos eram, voluntatum enuntiandarum signa communicavi et vitae humanae procellosam societatem altius ingressus sum pendens ex parentum auctoritate nutuque maiorum hominum.”⁵⁹

This excerpt from St. Augustine’s *Confessions* is (almost entirely) reported at the beginning of the *Philosophical Investigations* of Wittgenstein, who labeled it as giving a “particular picture of the essence of human language”.⁶⁰ That holds true with reference to both the way language is learned by children (i.e. by means of ostensive definitions and words teaching) and the intrinsic nature of language.

According to Wittgenstein, in the description Augustine gives every word has a meaning, which is the object for which the word stands. This is certainly true with regard to objects, such as “lamp”, “moon”, or “cat”. But it is also true with regard to actions, such as “to go”, “to eat”, “to speak”; and also with regard to the properties of objects and actions, such as “red”, “five”, “to sit ON”, “to go TO”.

⁵⁹ Augustinus, *Confessionum Libri Tredicim*, Liber Primus, c. 8 (see Augustinus, *Confessionum Libri Tredicim* (Citta Nuova Editrice) – available on-line at <http://www.augustinus.it/latino/confessionum/index.htm>). The following is the English translation of the excerpt found in St. Augustine, *Confessions and Enchiridion, newly translated and edited by Albert C. Outler* (Philadelphia: Christian Classics Ethereal Library, 2007), p. 17: “I remember this, and I have since observed how I learned to speak. My elders did not teach me words by rote, as they taught me my letters afterward. But I myself, when I was unable to communicate all I wished to say to whomever I wished by means of whimperings and grunts and various gestures of my limbs (which I used to reinforce my demands), I myself repeated the sounds already stored in my memory by the mind which thou, O my God, hadst given me. When they called some thing by name and pointed it out while they spoke, I saw it and realized that the thing they wished to indicate was called by the name they then uttered. And what they meant was made plain by the gestures of their bodies, by a kind of natural language, common to all nations, which expresses itself through changes of countenance, glances of the eye, gestures and intonations which indicate a disposition and attitude--either to seek or to possess, to reject or to avoid. So it was that by frequently hearing words, in different phrases, I gradually identified the objects which the words stood for and, having formed my mouth to repeat these signs, I was thereby able to express my will. Thus I exchanged with those about me the verbal signs by which we express our wishes and advanced deeper into the stormy fellowship of human life, depending all the while upon the authority of my parents and the behest of my elders.”

⁶⁰ L. Wittgenstein (translated by G. E. M. Anscombe), *Philosophical Investigations* (Oxford: Blackwell, 1953), p. 2, para. 1.

The position expressed by Wittgenstein fits in the description of language given in the previous section, where the compositional nature of language has been noted and the function played by listemes as building blocks of the utterance meaning explained. In the remainder of this chapter, the term “listeme” will be generally used instead of “word”, since the meaning of certain words is the result of the combination of the meanings of two or more listemes (see the previous example on the word “books”) and, therefore, “words” do not seem suitable to be presented as the building blocks of semantics.⁶¹ It is also worth mentioning, for the sake of clarity, that a listeme is not always represented by a single word, such as “dog” or “herring”; compound terms whose meaning cannot be determined by simply taking into account the meanings of the single words composing them and the syntactic rules regulating those words’ interaction are also regarded as listemes (the compound term “red herring” is a *good* example thereof).

Every time a listeme is used to indicate a specific object, action, quality, etc. the latter represents the *referent* of the listeme (i.e. what the listeme is pointing at in the intention of the uttering person). According to Wittgenstein,⁶² when children are taught a language by means of ostensive listeme teaching,⁶³ an association is established between the listeme and the specific referent pointed at (the specific cat pointed at, the specific action of eating carried on while saying the word “eat”, that specific color [red] of the sofa pointed at, etc.). Due to such association, every time a specific listeme (or its closely derived words and expressions) is uttered, a mental picture of the referent comes in the child’s mind.⁶⁴ After different referents are pointed at and shown in connection with the same listeme, the mental image takes a more focused and sharp shape. At this point, the author suggests, the mental image no longer refers to a specific referent, but to a certain *concept*, i.e. a mental object having the main characteristics common to the various referents pointed at. In the process of creation of the mental object corresponding to a certain listeme, the context of the utterance is of primary importance; to give just an example, “ball” may mean “a spherical or approximately spherical body or shape”⁶⁵ in a certain context, but it may also mean “pass me the ball now” in a different context, such as that of a football match.

Modern studies on the process of language acquisition by children tend equally to

⁶¹ On the contrary, Wittgenstein uses the term “Wort”, which is generally translated in English as “word” or “term”. That does not change the substance of his reasoning.

⁶² L. Wittgenstein (translated by G. E. M. Anscombe), *Philosophical Investigations* (Oxford: Blackwell, 1953), p. 4, para. 6.

⁶³ Ostensive teaching means the act of teaching something new to somebody by means of showing that something. Ostensive listeme teaching therefore is the act of teaching someone the meaning of a listeme by means of pointing at, or showing, something that represents an exemplification of the meaning of the listeme taught.

⁶⁴ Such an idea of mental images corresponding to listemes, put forward by Wittgenstein, has been later developed by Jackendoff, with reference to the idea of “conceptual structures”, according to which the meaning of a language expression is also given by means of a mental three-dimensional image associated with the word uttered (see R. Jackendoff, *Consciousness and the Computational Mind* (Cambridge: MIT Press, 1987), p. 201; R. Jackendoff, *Semantics and Cognition* (Cambridge: MIT Press, 1983), p. 139).

⁶⁵ This is the first entry for “ball” at the Dictionary.com Unabridged. Random House, Inc. (accessed 13 Oct. 2009).

stress the relevance of the context for this process, especially in its early stages.⁶⁶ Children start the process of language acquisition with no knowledge about the relation between listemes and meanings; thus, when they are presented with a listeme for the first time, the context in which the listeme is uttered is the only information they can rely on. When the experience with the listemes of the relevant language grows, the ability to associate listemes to referents and concepts grows as well, up to the point that, even without reference to a specific contextual situation, children are aware of and can choose among the various concepts corresponding to a listeme.⁶⁷

In order to explain the process of language acquisition, contemporary researchers tend to attribute a significant importance to the inputs that adults give to children, in terms of frequency and manner of uttering the various listemes. However, it is also generally recognized that other factors play a substantial role in that process. Proof thereof is given by fact that listemes such as “the” and “a”, which are among the most frequent listemes used by adults, are not acquired particularly early by children; moreover, although children theoretically have an infinite set of possible meanings to choose from, when presented with a novel listeme, they usually seem to figure out quite well what is meant by that listeme.⁶⁸

First, it has been noted that children tend to interpret novel listemes as referring to objects or object categories.⁶⁹ In this respect, some scholars have suggested that since, from a perceptual-cognitive perspective, concrete objects are easier to separate from the stream of surrounding information than activities or relations, due to their stability and/or saliency, they capture the children’s attention first. As a logical consequence, children tend to perceive the listemes they hear as referred to those objects.⁷⁰

Second, it has been suggested that children generally assume that different listemes contrast in meaning and, consequently, they tend to assign the novel listemes they hear to gaps in their lexicon (i.e. to referents and concepts for which they do not have yet any referring listeme).⁷¹ This conclusion relies on the idea that, in the process of language acquisition by children, language follows cognition and that there is normally a

⁶⁶ For a very clear summary of recent studies on the process of language acquisition by children, see L. Hogeweg, *Word in process. On the interpretation, acquisition, and production of words* (Utrecht: LOT, 2009), pp. 87 *et seq.*

⁶⁷ See, similarly, L. Hogeweg, *Word in process. On the interpretation, acquisition, and production of words* (Utrecht: LOT, 2009), pp. 4-5.

⁶⁸ See M. Tommasello, “Learning to use prepositions. A case study”, 14 *Journal of Child Language* (1987), 79 *et seq.*; L. Hogeweg, *Word in process. On the interpretation, acquisition, and production of words* (Utrecht: LOT, 2009), p. 88.

⁶⁹ See E. M. Markman and G. F. Wachtel, “Children’s use of mutual exclusivity to constrain the meaning of words”, 20 *Cognitive Psychology* (1988), 121 *et seq.*

⁷⁰ See, for instance, D. Gentner, “Why Nouns are Learned Before Verbs: Linguistic Relativity versus Natural Partitioning”, in S. A. Kuczay (ed.), *Language development. Vol. 2. Language, thought, and culture* (Hillsdale: Erlbaum, 1982), 301 *et seq.*

⁷¹ See the theory based on the Principle of Contrast, developed by Clark (E. V. Clark, “The principle of contrast: A constraint on language acquisition”, in B. MacWhinney (ed.), *Mechanisms of language acquisition* (Hillsdale: Erlbaum, 1987), 1 *et seq.*), and the slightly different theory based on the Principle of Mutual Exclusivity, described by Markman and Wachtel (E. M. Markman and G. F. Wachtel, “Children’s use of mutual exclusivity to constrain the meaning of words”, 20 *Cognitive Psychology* (1988), 121 *et seq.*).

temporal gap between the emergence of a concept in a child and his ability to properly associate it with a listeme.⁷² Nonetheless, it has also been put forward that the process of language acquisition cannot be reduced to the learning of listemes to be associated to predefined and pre-acquired concepts, since an important phase in the process of language acquisition is represented by the very same construction of those concepts.⁷³ In particular, empirical evidence seems to exist in support of the hypothesis that children, when faced with new listemes, tend to create new (corresponding) concepts, if no previously-created unlabelled concept is available. Such new concepts often relate to a salient part, or property of a familiar object.⁷⁴

Based on the above, scholars have upheld the view that the relation between language acquisition and cognition is bidirectional, in that, on the one hand, children must be able to conceptualize aspects of their perceptual experience to recognize the appropriate way of referring to those aspects and, on the other hand, linguistic forms (e.g. listemes) may focus children's attention on certain aspects of experience that they would not have focused on otherwise.⁷⁵ As Hogeweg puts it, "linguistic development is inextricably bound up with cognitive development and they influence each other. Certain cognitive abilities are prerequisite to be able to learn language but at the same time linguistic conventions may influence the categorization of concepts".⁷⁶

The above description of the process through which children learn the meaning of listemes, words and expressions holds true more generally for the entire category of human beings. More importantly it highlights, by exemplifying a technique of learning, the general existence of a structural relation between listemes and concepts, which characterizes human language and thought.

The relation between listemes and concepts, as well as the characteristics of concepts as such, are duly analysed in the following sections.

⁷² See, for instance, J. R. Johnston and D. I. Slobin, "The development of locative expressions in English, Italian, Serbo-Croatian and Turkish", 6 *Journal of Child Language* (1979), 529 *et seq.*

⁷³ See L. Steels, *The Talking Heads Experiment* (Antwerpen: Laboratorium, 1999) and A. D. M. Smith, "The Inferential Transmission of Language", 13 *Adaptive Behavior* (2005), 311 *et seq.*

⁷⁴ See E. M. Markman and G. F. Wachtel, "Children's use of mutual exclusivity to constrain the meaning of words", 20 *Cognitive Psychology* (1988), 121 *et seq.*

⁷⁵ L. Hogeweg, *Word in process. On the interpretation, acquisition, and production of words* (Utrecht: LOT, 2009), p. 98, citing M. Tommasello, *Constructing a Language. A Usage-Based Theory of Language Acquisition* (Cambridge: Harvard University Press, 2003). See, similarly, the Division of Dominance theory developed in D. Gentner and L. Boroditsky, "Individuation, relational relativity and early word learning", in M. Bowerman and S. Levinson (eds.), *Language acquisition and conceptual development* (Cambridge: Cambridge University Press, 2001), 215 *et seq.*; this theory constitutes the basis of the Relational Relativity hypothesis, according to which there is much more cross-linguistic diversity in the naming of relations between entities and actions, than there is in the naming of objects. Such a hypothesis proves useful in order to explain the non-perfect overlapping of similar legal concepts (which mainly concern relations) employed within different legal systems, and the related absence of synonymy between the corresponding legal terms, which is discussed in section 4 of Chapter 4 of Part II of this dissertation.

⁷⁶ L. Hogeweg, *Word in process. On the interpretation, acquisition, and production of words* (Utrecht: LOT, 2009), p. 99.

2.2. *The relation between listemes and concepts: basic features*

In order to illustrate the basic features of the relation existing between listemes and concepts, the spotlight is moved back to the previous example of a “ball”. When someone utters “ball” in the context of a football match, he exactly wants to say “ball”, meaning a request to the person in possession of the ball to pass it to him as soon as possible. Thus, the meaning of the utterance “ball” is, translated into our day-to-day language, the meaning of a sentence such as “pass me the ball now”. The latter is just a means to make someone (the reader, for example) understand what the speaker means by saying “ball”, that is what the speaker wants to obtain by uttering “ball”. The need to express “ball” in terms of “pass me the ball now” is due to the fact that the hearer does not know the language spoken in the context of the football match, but knows what the author referred to as the day-to-day language. Moreover, none of the two expressions is intrinsically superior to the other: they are simply two expressions in two different languages.

Even assuming the substantial correspondence of meanings between the expressions “ball” and “pass me the ball now” within the football match context, it must be recognized that such expressions may denote different actions depending on the type of football match that is actually played. For instance, the actions connected to the passing of the ball in a soccer match significantly diverge from those connected to the passing of the ball in an American football match, since the rules of the two games are different.

This remark may seem puzzling and can legitimately lead someone to wonder, on the one hand, whether two distinct concepts of “passing the ball” exist in connection with soccer and American football and, on the other hand, whether it is correct to say that “pass me the ball” is one and the same day-to-day language expression when used in the context of a soccer match and in the context of an American football match.

These questions are two sides of the same coin and originate from the complex relation existing between the two levels characterizing the use of language. The first one is the level of the concepts, which relies significantly upon the encyclopedic knowledge of the people communicating with each other. The second one is the level of the listemes used in order to refer to such concepts, where the very same concept may be referred to by means of different listemes and the very same listeme may be used to refer to more than one concept.

These two levels (concepts and listemes) are strictly interconnected with each other and together characterize any kind of language use: to have a useful knowledge of a certain listeme in a specific language implies having some knowledge of the concept referred to by means of that listeme in that language. Such knowledge is not limited to the definitions of the specific listeme that may be found in dictionaries (i.e. the semantic specifications of that listeme as a lexicon entry), but includes the encyclopedic knowledge of the underlying concept and of the fields where the latter is relevant.⁷⁷ That

⁷⁷ The dividing line between the knowledge that may be derived from dictionaries (i.e. the lexicon knowledge, in particular with regard to semantic specifications) and the encyclopedic knowledge is blurred. Traditionally,

is because, where the knowledge of a specific listeme does not encompass some encyclopedic knowledge of the concept referred to by means of that listeme in that specific language, that listeme cannot be suitably used for communication purposes.⁷⁸ If, for example, we assume that the listeme “ball” in the specific language of soccer refers to the concept of passing the ball (the encyclopedic knowledge of which also includes the rules on how to pass the ball in soccer), a person may be said to usefully know the listeme “ball” in the soccer language only where he actually knows the concept of passing the ball in soccer and its relevant rules, at least to a certain extent. Where this is not the case, that person cannot communicate by means of that listeme with other people, since there will be no agreement between the speaker and the hearer on the content of the message transmitted by means of such a listeme, if not by mere chance.⁷⁹

In that respect, there are various degrees of knowledge of a concept and, theoretically, it is possible to ordinate such levels on a continuous scale⁸⁰ whose edges could be named superficial knowledge (the least knowledge necessary in order to theoretically communicate by means of the corresponding term) and in-depth knowledge (the maximum level possible). The possibility of an effective communication between two persons by means of a specific listeme does not require an in-depth knowledge of the corresponding concept. What is necessary, instead, is that the hearer does have at least the same level of knowledge implicitly required by the speaker when he chose and used a specific listeme in its specific context (including the utterance in which the

a lexicon is considered to contain lexicographical information about listemes (i.e. formal, morphosyntactic and semantic specification) in the language, whereas an encyclopedia is considered to contain extra-linguistic semantic information about a name-bearer, in particular information about what listemes are used to refer to (see K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), pp. 100 *et seq.*). Within the present study, in many occasions the concept of encyclopedic knowledge is intended as inclusive of the semantic specifications of a listeme generally included in dictionaries.

⁷⁸ Consider the following instance (discussed, in a slightly different fashion, in L. Wittgenstein (translated by G. E. M. Anscombe), *Philosophical Investigations* (Oxford: Blackwell, 1953), p. 125, paras. 554-555). Consider two groups of people that apparently use the same language and, in particular, do use the very same negation sign. For both groups, such a negation sign determines the negation of the meaning of the expression to which it is attached. For one group, however, where the expression to be negated already contains one negation, the addition of the negation sign just works as an intensifier of the first negation (e.g. the expression “non-non-good” somewhat corresponds to the expression “very bad”). On the contrary, for the other group, the two negations offset each other (e.g. the expression “non-non-good” somewhat corresponds to the expression “good”). According to Wittgenstein, the question whether the negation does have the same meaning to these two groups of people would be analogous to the question whether the figure “5” meant the same to people whose numbers ended at 5 as to us.

⁷⁹ A similar consideration is expressed by Fillmore and Atkins, who point out that a word’s meaning can be understood only with reference to a structured background of experience, beliefs, or practices, constituting a conceptual prerequisite for understanding the meaning. They conclude that speakers can be said to understand the meaning of the word only by first understanding the background frames that motivate the concept that the word encodes (see C. J. Fillmore and B. T. Atkins, “*Toward a frame-based lexicon: the semantic of RISK and its neighbors*”, in A. Lehrer and E. F. Kittay (eds.), *Frames, Fields, and Contrasts. New Essays in Semantic and Lexical Organization* (Hillsdale: Lawrence Erlbaum, 1992), 75 *et seq.*, at 76-77). According to Allan, language is a cognitive and psychological entity that must be “known” in order to be used. In addition, he points out that meaning in natural languages is very responsive to, and often a reflex of, human perception and conception (see K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), p. 3).

⁸⁰ As most of the things concerning human thought, the scale is a continuous one, the boundary between one level and the following one being blurred, or even nonexistent at all.

listeme has been used) in order to transmit the message he had in mind.

The example of the ball and the distinction made between the two levels of the language structure constitute a good starting point to highlight the two main characteristics of the relation existing between concepts and listemes: conventionality and ambiguity.

2.3. *The relation between listemes and concepts: conventionality*

The correspondence between concepts and listemes is conventional, i.e. the meaning of listemes is conventional.^{81 82}

The conventional correspondence between a listeme and a concept presupposes a necessary agreement between the people using such a listeme.⁸³ Without an agreement on the correspondence between listemes and concepts, listemes cannot be used to express concepts and, therefore, they cannot be used in order to communicate: they are outside the scope of language (as previously defined). Such a necessary agreement is between the person using a specific listeme in an utterance and all the potential recipients of that utterance. The agreement generally points to the correspondence established by a specific person, or group of persons, and then accepted by others.

With reference to the content of the agreement, i.e. the conventional correspondence between a concept and a listeme, it is useful to distinguish between the way in which the correspondence is established, on the one hand, and the techniques through which it may be expressed, on the other.

In relation to the first aspect, the content of the agreement may be established (i) by means of an *ad hoc* arrangement among all the persons that are using the listeme in the specific circumstance, both as speakers and hearers, (ii) by a recognized rule⁸⁴ that

⁸¹ The contrast between the *naturalist hypothesis*, according to which the original meaning of a word gives rise to its original form “naturally”, and the *conventional hypothesis*, according to which the correspondence between meaning and form is entirely arbitrary and, at the same time, conventional because it needs to be agreed upon and learned by the language community, dates back at least to the age of classic Greek philosophers (see Plato (translated by B. Jowett), *Cratylus* (The Internet Classics Archive) – available online at <http://classics.mit.edu/Plato/cratylus.html>). The very same etymology of the word “etymology” seems to confirm that in ancient Greece the *naturalist hypothesis* was widespread and well-rooted: “etymology” in fact derives from the combination of the listeme “etymos”, which means “true sense of words”, and the listeme “logia”, which means “study of”.

⁸² On the conventional nature of language expressions and their typical feature of quickly changing meanings, it is interesting to read the criticism of Wright’s naturalistic theory made by Allen in K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), pp. 159-160.

⁸³ On the relation between conventional correspondence and agreement, as well as on the different types of agreement, see L. Wittgenstein (translated by G. E. M. Anscombe), *Philosophical Investigations* (Oxford: Blackwell, 1953), p. 23, paras. 53 and 54.

⁸⁴ The rule must be recognized among the people that are supposed to use that specific listeme as corresponding to that specific concept.

attributes to a person or a group of person the power to do so,⁸⁵ or, in the majority of cases, (iii) by praxis.

With regard to praxis, it is necessary to keep in mind that this is empirical and not uniform. Praxis is empirical since the correspondence between the listeme and the concept must have been previously established at least once by at least one person and because the more frequently such a correspondence has been agreed upon in the past within a certain group of people, the more probable is that it will be upheld in the future within the same group. Praxis is not uniform in the sense that it varies according to the context, i.e. across different times, geographical and cultural areas, depending on the subject matter of the utterance and the people involved (i.e. the speaker and the potential hearers).

Therefore, in the vast majority of cases the correspondence between listemes and concepts established by praxis appears to be erratic. Once the context in which the listeme is used is established, however, the variety of the correspondence is narrowed down.⁸⁶ Still, due to the empirical nature of praxis, it is possible that, in a given context, there is more than one possible correspondence between a given listeme and the underlying concept. That makes the correspondence ambiguous, as will be discussed below.

For the reasons just summarized, the questions whether an agreement exists and which correspondence constitutes its content appear to be matters of inductive inference based on the frequency of the praxis in the given context and on all other items of evidence available.

With regard to the second aspect, the established content of the agreement may be expressed by means of (i) ad hoc definitions (descriptions)⁸⁷ of the listemes and (ii) exemplifications (which include ostensive exemplifications).

Definitions have the drawback of being made up of listemes that correspond to other concepts, here referred to as sub-concepts.

⁸⁵ For example, in western democracies, the power attributed to the legislator of establishing a correspondence between a listeme and a concept that has to be universally accepted within the community where such a correspondence is established as part of the law.

⁸⁶ As stated by Wittgenstein, words have meaning only as part of a sentence (see L. Wittgenstein (translated by G. E. M. Anscombe), *Philosophical Investigations* (Oxford: Blackwell, 1953), p. 21, para. 49). This function performed by the context is one of the specific fields of pragmatics, on which, in general, see J. L. Mey, *Pragmatics, An Introduction* (Oxford: Blackwell, 2001); K. M. Jaszczolt, *Semantics and Pragmatics, Meaning in Language and Discourse* (London: Longman, 2002) and the vast bibliography cited therein.

⁸⁷ Definitions and descriptions may be distinguished by considering (i) the descriptions as assertive sentences made of listemes, through which the correspondence between the listeme described and a concept is expressed; and (ii) the definitions as particular kind of descriptions, in which the concept corresponding to the defined listeme presents several features and these features are also proper to the sub-concepts corresponding to the (sub-)listemes used in the definition itself. When a definition, in this sense, is used, the features of the sub-concepts corresponding to the listemes used in the definition, taken as a whole, *biunivocally* match the features of the concept corresponding to the defined listeme. Substantially, this is the distinction between definitions and descriptions drawn in L. Wittgenstein (translated by D. F. Pears and B. F. McGuinness), *Tractatus Logico-Philosophicus* (London: Routledge, 2001). For the purpose of the present study such a distinction is not relevant and, therefore, is not maintained; the terms “definition” and “description” here are used as synonyms having the meaning attached to the listeme “description” above.

The correspondence between the sub-concepts and the listemes used in a definition is also conventional and has to be expressed somewhat. Therefore, for a definition to work, it is necessary to agree upon the correspondence between the listemes used in the definitions itself and the related concepts (sub-concepts) and to express such a correspondence through one of the means previously discussed. Theoretically, if such (sub-)correspondences were always expressed by means of definitions, the process of expressing the initial correspondence would prove either never-ending or circular and, therefore, useless.⁸⁸ An instance of such an issue appears from the following example,⁸⁹ in which the reader should assume not knowing the meaning of the listemes written in *bold italics*.

Listeme: **computer**

Definition 1: an electronic **device** designed to accept data, perform prescribed mathematical and logical operations at high speed, and display the results of these operations.

The author then considers one listeme of definition 1: **device**

Listeme: **device**

Definition 2 (the first of seven alternative definitions in the dictionary): a thing made for a particular **purpose**; an invention or contrivance, esp. a mechanical or electrical one.

The author then considers one listeme of definition 2: **purpose**

Listeme: **purpose**

Definition 3 (the first of eleven alternative definitions in the dictionary): the **reason** for which something exists or is done, made, used, etc.

The author then considers one listeme of definition 3: **reason**

Listeme: **reason**

Definition 4 (the first of nineteen alternative definitions in the dictionary): a basis or **cause**, as for some belief, action, fact, event, etc.: the reason for declaring war.

The author then considers one listeme of definition 4: **cause**

Listeme: **cause**

⁸⁸ Similarly, L. Wittgenstein (translated by G. E. M. Anscombe), *Philosophical Investigations* (Oxford: Blackwell, 1953), p. 35, para. 87. With reference to the interpretation of treaties, see W. Hummer, ““Ordinary” versus “Special” Meaning. Comparison of the Approach of the Vienna Convention on the Law of Treaties and the Yale-School Findings”, 26 *Österreichische Zeitschrift für öffentliches Recht* (1975), 87 *et seq.*, at 95.

⁸⁹ The following definitions are provided by the Dictionary.com Unabridged. Random House, Inc. (accessed 15 Jan. 2010).

Definition 5 (the first of ten alternative definitions in the dictionary): the **reason** or **motive** for some human action: The good news was a cause for rejoicing.

Would the reader continue by choosing the listeme **reason** or **motive**? Where the listeme **reason** was chosen, the reader would be sent back to definition 4 and, thus, the definition of the listeme **computer** would prove to be circular. Where, on the contrary, the listeme **motive** was selected, the reader should have recourse to another definition, with the risk of continuing endlessly.

However, as a matter of fact, in many instances the agreed correspondence is expressed by means of exemplifications (as well illustrated in the above example by both definitions 4 and 5) and the risk of circular or never-ending streams of definitions is therefore actually removed.

The fact that definitions are means to express a potentially agreed correspondence between listemes and concepts implies that a definition is never correct or incorrect *per se*. A definition is, *per se*, simply tautological. A definition may be called incorrect only where it is presented as expressing a correspondence agreed upon within a certain group of people, but, as a matter of fact, such a correspondence proves to be non-established within that group. In the latter case, however, the issue is not in the definition *per se*, but rather in the way in which that is portrayed.

Moving to exemplifications, the latter consist in pointing to specific facts, things, actions, etc. as prototypes of (the set of features of) specific concepts. The most evident and relevant features of the specific facts, things, actions, etc. pointed at in a certain context are, by means of induction, conventionally established as the set of features of the concept corresponding to the listeme at stake.

2.4. *The relation between listemes and concepts: ambiguity*

The correspondence between concepts and listemes is characterized by ambiguity.

This idea may be differently expressed by saying that generally the correspondence is not biunivocal,⁹⁰ i.e. in the majority of cases a concept does not correspond to a single listeme (synonymy) and a listeme does not correspond to a single concept (polysemy).⁹¹

⁹⁰ As a consequence, “when a particular word is used, there is not one corresponding meaning which the hearer can automatically associate with it. Instead, the hearer chooses the best or optimal interpretation of a word in a given situation. Similarly, when a speaker wants to express something, there is not always a form available that perfectly corresponds to the intended meaning. Therefore, the speaker chooses the word that corresponds to the intended meaning the best, in other words, she chooses the *optimal* form.” (L. Hogeweg, *Word in process. On the interpretation, acquisition, and production of words* (Utrecht: LOT, 2009), pp. 2 and 3).

⁹¹ Linguists distinguish between *polysemy* and *homonymy*. The former is generally intended as referring to the plurality of meanings attributable to one and the same listeme, which is characterized by a single form and a single set of morphosyntactic specifications and corresponding to a single lexicon entry in dictionaries.

The phenomenon of ambiguity is the result of the way in which the agreed correspondence between listemes and concepts is established, in particular it is the result of the above-described process of agreement formation by means of praxis. As already mentioned, praxis is characterized by significant spatial and temporal variability, which leads to both the stratification of meanings expressed by a single listeme and the use of different listemes to express the very same concept. The magnitude of the phenomenon has been further enhanced, in many language communities, by the custom of having new correspondences between listemes and concepts unilaterally and generally established by the act of a person (or group of persons) properly empowered to do so by a recognized rule of the community.

The phenomenon of polysemous listemes is explained well by the theory of *semantic chains*.⁹² According to this theory, in most cases listemes originally correspond

Typically, when polysemy is at stake, the various concepts corresponding to a single listeme are semantically related, either in a systematic way (i.e. each listeme of a particular semantic class potentially corresponds to the same variety of concepts; e.g. “door”, “gate”, “window” may be used to refer to both the aperture and the covering of such aperture) or in a non-systematic way (i.e. there is no predictable pattern of concepts corresponding to a particular semantic class; e.g. the listeme “arm” may refer both to the arm of government and to human arm) (see A. Koskela and M. L. Murphy, “Polysemy and Homonymy”, in K. Allan (ed.), *Concise Encyclopedia of Semantics* (Oxford: Elsevier, 2009), 711 *et seq.*, at 711). Homonymy, on the other hand, is generally intended as referring to the phenomenon of two listemes with coincidental identical form, i.e. having the same form but usually different morphosyntactic specifications and corresponding to two different lexicon entries in dictionaries. Homonyms arise either accidentally through lexical borrowings and changes, or through some semantic or morphological drift such that a previously polysemous form is no longer perceived as being the same listeme in all its senses. In the latter case, the passage from polysemy to homonymy is subjective and sometimes conventionally recognized within a certain community. Unlike the concepts corresponding to a single polysemous listeme, concepts corresponding to different homonymous listemes are, in most cases, not semantically related (see A. Koskela and M. L. Murphy, “Polysemy and Homonymy”, in K. Allan (ed.), *Concise Encyclopedia of Semantics* (Oxford: Elsevier, 2009), 711 *et seq.*, at 711). However, this does not always hold true and linguists recognize that a clear distinction between polysemous and homonymous listemes remains difficult to draw (see A. Koskela and M. L. Murphy, “Polysemy and Homonymy”, in K. Allan (ed.), *Concise Encyclopedia of Semantics* (Oxford: Elsevier, 2009), 711 *et seq.*, at 711). Nonetheless, while drawing such a distinction remains relevant for linguists, in particular semanticists and lexicographers, it is not so for the purpose of the present study, in relation to which what is relevant to highlight is the fact that in natural languages the phenomenon of having different concepts corresponding to a single graphic form (either a single listeme or multiple homonymous listemes) is widespread. Therefore, in the remainder of this study, each reference to “polysemy” must be read as made to “homonymy” as well, unless otherwise indicated in the text.

⁹² Such a theory is also known in linguistics as the *chain of similarities* theory and the *family resemblance* theory. On semantic chains, G. Lakoff, *Woman, fire and dangerous things. What categories reveal about the mind* (Chicago: University of Chicago Press, 1987), in particular Part I.

Similarly, *semantic map* theory may also be used to explain the phenomenon of polysemous listemes. *Semantic maps* aim at representing form-meaning correspondences and, by linking up language-specific formal categories to semantic categories, are purported to show that the multiple uses of a listeme are related in a systematic and universal way (J. van der Auwera and C. Temürçü, “Semantic Maps”, in K. Allan (ed.), *Concise Encyclopedia of Semantics* (Oxford: Elsevier, 2009), 863 *et seq.*, at 863). On semantic map theory see also J. van der Auwera and V. Plungian, “Modality’s semantic map”, 2 *Linguistic Typology* (1998), 79 *et seq.*; J. van der Auwera, N. Dobrushina and V. Goussev, “A semantic map for imperative-hortatives”, in D. Willems *et al.* (eds.), *Contrastive Analysis in Language. Identifying Linguistic Units of Comparison* (Basingstoke: Palgrave Macmillan, 2004), 44 *et seq.*; M. Haspelmath, “The geometry of grammatical meaning. Semantic

to a single concept. By means of praxis, the listemes then start to be used by a part of the language community in order to refer to items that are outside the scope of the original concept, but which present some kind of similarities with the items typically encompassed within its scope. When such a new use of the specific listeme becomes widespread within a relevant part of the language community, it may be said that listeme corresponds to two concepts within that language community. The process of creation of new correspondences between the listeme and concepts continue along these lines, so that a certain point in time a semantic chain of concepts corresponding to a single listeme appears to be in place. Along the chain, the first and the last concepts are semantically quite distant.⁹³ Allan gives the example of the listeme “mother” in order to show the effects of the process.⁹⁴ The prototypical meaning of the listeme “mother”, which is most probably the original meaning thereof, denotes the female human beings that produce the ovum, conceive, gestate, give birth and nurture the child. Starting from such a concept, praxis has then extended the use of the listeme “mother” to: (i) the concept of the nurturant mother that is not the biological mother;⁹⁵ (ii) the concept of biological mother that does not nurture the child; (iii) in turn, from the concept of biological mother are derived the distinct concepts of ovum source mother⁹⁶ and gestation-birth mother; (iv) from the concept of nurturant mother are derived the concepts of spiritual mother and of mother superior in a religious context. Other concepts corresponding to the listeme “mother” could be added to the above list.

Semantic chains prove useful in order to analyse and explain why two listemes of two natural languages share just a part of their respective corresponding concepts. Consider, for instance, the listemes “ride” in English and “reiten” in German.⁹⁷ Both

maps and cross-linguistic comparison”, in M. Tommasello (ed.), *The new psychology of language*, Vol. 2 (Mahwah: Erlbaum, 2003), 211 *et seq.*

⁹³ Lakoff distinguished two types of semantic chains, which he called *family resemblance categories*. The first type is that of *generative categories*, which can be formed by taking the prototypical concept corresponding to a listeme member of a certain semantic class and applying to such a concept the class rules of generation in order to designate category membership, i.e. in order to determine the other concepts that correspond to the same listeme. The concepts pertaining to a generative category appear thus semantically related in a systematic way, in the sense described in previous note 91 (i.e. each listeme of a particular semantic class potentially corresponds to the same variety of concepts; e.g. “door”, “gate”, “window” may be used to refer to both the aperture and the covering of such aperture). The second type is that of *radial categories*, whose actual structure is not predictable since the category is not determined by application of any class rule of generation. The concepts pertaining to a radial category appear therefore semantically related in a non-systematic way, in the sense described in previous note 91 (i.e. there is no predictable pattern of concepts corresponding to a particular semantic class). It should be noted that the idea of family resemblance categories was originally put forward by Wittgenstein (see L. Wittgenstein (translated by G. E. M. Anscombe), *Philosophical Investigations* (Oxford: Blackwell, 1953), p. 26, paras. 66-67) and only later developed by Lakoff in G. Lakoff, *Woman, fire and dangerous things: What categories reveal about the mind* (Chicago: University of Chicago Press, 1987), Chapter 2.

⁹⁴ K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), pp. 328-329. The example is a reformulation of that originally discussed in G. Lakoff, *Woman, fire and dangerous things: What categories reveal about the mind* (Chicago: University of Chicago Press, 1987), pp. 82-83.

⁹⁵ The nurturant mother may be adoptive, foster, etc.

⁹⁶ Generally called *genetic* mother.

⁹⁷ Example taken from J. Lyons, *Semantics* (Cambridge: Cambridge University Press, 1977) – Vol. 1, pp. 263-264.

listemes were originally used to refer to the action of riding on horseback.⁹⁸ However, in German the original meaning has expanded as to include actions such as sitting astride a beam;⁹⁹ in this case, the specific posture or position of sitting was determinative in directing the meaning expansion. Differently, in English the original meaning has expanded as to include both (i) the act of transportation by means of bikes or motorbikes on which the posture is similar to that on a horse, and (ii) the act of transportation by other means such as coaches, trains and cars, where the original horseback-riding posture is not required; in this case, the fact of being conveyed was decisive in directing the meaning expansion.

However, the theory of semantic chains, although useful in order to explain ex post the reasons why certain semantically distant concepts correspond to the same listeme, cannot be used to predict the future evolution of such chains, since in many instances semantic chains spread out in various directions creating a sort of non-systematic radiations.

From a different perspective, the extent of language ambiguity is directly related to and influenced by the level of (intellectual) specialization that characterizes the community where the language is used. In communities where the aggregate wealth and its distribution within the group is such as to guarantee that some part of community population may commit part or the whole of its time to intellectual speculations and scientific research, as well as in communities where human activities are specialized and accordingly performed by dedicated subgroups, the ambiguity of language is generally higher due to the birth and proliferation of *jargons*. Jargon may be defined as the language (especially the vocabulary) peculiar to a particular trade, profession or group.¹⁰⁰ Jargons contribute to increase the ambiguity of language since they (i) increase the polysemy of existing listemes and (ii) create new listemes to express concepts that are similar to concepts corresponding to pre-existing listemes, the difference between such concepts being sometimes blurred (or, in extreme cases, becoming non-existent). Jargons are, in fact, characterized by novel listemes and pre-existing listemes used in new ways, especially because the specialized vocabulary needs to name those concepts that are special to the domains in which the jargons are used. Although performing this proper and necessary function, jargons (and their specialized vocabulary) are in some cases vacuous and pretentious, adopting harsh neologisms to express well-known concepts just for the pleasure of making the jargon community appear to be an elite group and producing, as a consequence, the above-mentioned undesirable effect of making language more ambiguous.¹⁰¹ In this sense, the members of certain groups use jargons as entrance-barriers in order preserve any possible caste or competitive

⁹⁸ They have common origin in the Proto-Germanic language(s). See Online Etymology Dictionary (Douglas Harper. Accessed 09 Oct. 2009). With reference to their common etymology, see also the reference to their diachronic relation in J. Lyons, *Semantics* (Cambridge: Cambridge University Press, 1977) – Vol. 1, p. 263.

⁹⁹ Auf einem Balken reiten in German.

¹⁰⁰ This is the first entry for “jargon” at the Dictionary.com Unabridged. Random House, Inc. (accessed 18 Jan. 2010).

¹⁰¹ K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), pp. 170-172.

advantages against outsiders. These (limited) negative features of jargons give the reasons why in current English (as well in other languages) “jargon” is still used sometimes with a negative connotation. It is enlightening, in this respect, to report other dictionary definitions of jargon: unintelligible or meaningless talk or writing; gibberish; any talk or writing that one does not understand; language that is characterized by uncommon or pretentious vocabulary and convoluted syntax and often vague in meaning.¹⁰² The etymology of the listeme “jargon” and the meanings it used to express in the past confirm the historical and widespread negative connotation of jargons, as well as the related general aversion and prejudice towards the underlying phenomenon of class-languages.¹⁰³

However, in modern society jargons indisputably play a fundamental role as technical or specialist languages, providing the members of the various groups with a precise, efficient and economical language tool, capable of capturing distinctions not made in the ordinary language.

Jargons are characterized (and their existence identified) by the presence of certain common features.¹⁰⁴ These are mainly of a lexical nature, such as the existence of specialized vocabularies for specific domains and the use of idioms, abbreviations and acronyms,¹⁰⁵ although some are of syntactic (e.g. the widespread use of “shall” in the third person) or presentational nature (e.g. the format in which a written text is presented). In any event, the boundaries of a jargon are difficult if not impossible to draw, which makes any particular jargon difficult to define precisely, especially because every jargon borrows from language that is common to other jargons.¹⁰⁶

In light of the subject matter of the present study, it may be interesting to briefly highlight the main features of English legal jargon (some of which are common to legal jargons expressed in other natural languages). First, English legal jargon is characterized

¹⁰² These are entries 2, 3 and 5 for “jargon” at the Dictionary.com Unabridged. Random House, Inc. (accessed 18 Jan. 2010).

¹⁰³ Allan reports that, in middle English, “jargon” was generally used to describe the chattering of birds, or human speech that sounded as meaningless as the chattering of birds (see K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), p. 169). Etymologically, “jargon” and the corresponding Italian “gergo” seem to derive from the Indo-European root “garg”, from which the Latin “gurgula”, the Italian “gargana” and the Spanish “garganta” derive, all of which denote the “throat”, or from the Indo-European root “gar”, from which the greek “Geryo” and the Italian “gridare” derive, which means to speak loudly (see Vocabolario Etimologico Pianigiani della lingua italiana on-line, accessed 10 February 2010; K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), p. 169).

¹⁰⁴ K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), p. 172 *et seq.*

¹⁰⁵ It is interesting to note that the “English international tax language” presents to a certain extent the lexical features of a jargon. This is apparent when we think about the existence of certain technical terms such as “resident” and “permanent establishment”; idiomatic expressions such as “beneficial owner” and “at arm’s length”; acronyms such as “CFC”, “DTC” and “LOB”. It is also interesting to note that the international tax community has enhanced this process of jargon formation by creating specialized glossaries, such as the “IBFD International Tax Glossary” in the English language. Notwithstanding these features and the efforts of the international tax community, the international tax domain still heavily relies on the official national tax languages of the various States of the international community and, thus, the scope of the international tax jargon (if any) is very limited. In contrast, at the level of the various States of the international community, the official national tax languages generally constitute quite well-developed jargons.

¹⁰⁶ K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), p. 176.

by an *ad hoc* vocabulary, made of (i) listemes exclusively used in the legal language and (ii) listemes that are used in the legal language to convey meanings different from those corresponding to those listemes when used in the day-to-day language. Furthermore, English legal jargon vocabulary presents a significant number of listemes borrowed (or derived) from Latin and French. From the syntactical and formal perspectives, it is common practice to structure long and very complex sentences,¹⁰⁷ frequently difficult to comprehend, in which two or three synonyms are often strung together.¹⁰⁸ It is also characterized by the large numbers of passives, nominalizations, multiple embeddings, intrusive phrases, multiple negatives and other features that generally make the public feel offended by the perception that the writer of the legal text is requiring them to spend an unreasonable effort in order to understand what the document means.^{109 110}

Based on the above, the conclusion may be drawn that the adoption of a particular jargon in formulating an utterance generally implies the correspondence between the listemes used therein and the concepts that are associated with such listemes within that specific jargon (if any). This has remarkable consequences for the meaning of the utterance itself. In fact, where the hearer may reasonably establish that a particular jargon has been used in formulating the utterance, a plausible presumption exists that, among the various concepts theoretically corresponding to a certain listeme, the speaker has chosen the one(s) whose correspondence to the listeme is typical of jargon used (e.g. the concept of “pass me the ball now” in soccer jargon). Various kinds of evidence exist that may lead the hearer to conclude that a specific jargon is used by the speaker, the most relevant being: the subject matter of the utterance (e.g. a technical subject matter to which a specific jargon corresponds), the identity and capacity of the speaker (e.g. a professor in a specific subject matter that has its own jargon, giving a lecture on such a subject matter), the identity and capacity of the prototype hearers (e.g. doctors attending a conference on recent medical developments in neurology), the purpose of the utterance (e.g. an in-depth analysis of a technical subject matter), the extensive use of idiomatic expressions and listemes specific to a certain jargon. The attribution of different weights to the items of evidence available in order to conclude whether a specific jargon has been used by the speaker implies a discretionary assessment (judgment) from the hearer.

However, even when the ambiguity of certain listemes used in the utterance is reduced by the conclusion that the speaker adopted a specific jargon in formulating it, the overall ambiguity of the utterance cannot be entirely removed. This is due to various factors.

¹⁰⁷ Danat reports that the average length of a sentence in a legal document is 55 words, which is 8 times the length found in dramatic texts (see B. Danat, “Language in the legal process”, 14 *Law and Society Review* (1980), 445 *et seq.*, at 479).

¹⁰⁸ According to Allan (see K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), p. 173), this feature derives from the early practice in English legal texts of conjoining a term of Germanic origin with a synonym of Romance origin.

¹⁰⁹ These features, commonly emphasized in the critical observations made by legal researchers, are even more precisely perceived by non-legal researchers, in particular linguists, among whom, for extensive references, K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), p. 174.

¹¹⁰ The prototype of the lawyer abundantly mis(using) legal jargon is incomparably well sketched by Alessandro Manzoni when describing the “eloquence” of dottor Azzecagarbugli in “I promessi sposi”.

First, within a specific jargon, the correspondence between a listeme and a concept is not always biunivocal: a certain listeme may be characterized by polysemy even within a specific jargon. Second, concepts may be vague with regard to their scope, in the sense that there are often borderline items the inclusion of which in the scope of the relevant concept is uncertain. Third, many jargons are variations of day-to-day languages, from which they borrow most of their vocabulary and their morphosyntactic rules; therefore, even if the ambiguity is reduced with regard to the technical listemes of the jargon, it almost invariably remains in respect of those listemes borrowed directly from the day-to-day language. Fourth, ambiguity may derive from the combination of listemes into sentences and from the underspecification of the latter.¹¹¹

To conclude, the potential ambiguity of the listemes used in an utterance appears notably narrower than it seemed at first glance. The relevance that the context may have for ascertaining the meaning that a specific listeme does have in a specific utterance has already been mentioned. For the time being,¹¹² the author assumes the context is made of all information regarding the framework where the specific listeme and the utterance in which it is encompassed have been pronounced. The context may thus be deemed to encompass: the subject matter of the utterance, the identity and capacity of the speaker and of the potential hearers, the purpose of the utterance, the use of a specific jargon, the semantic content of (the remainder of) the utterance where the listeme is used and of nearby utterances, the cooperative principle (i.e. the common rules on human behavior when communicating), as well as the background and experiences of the speaker and hearers, including their *encyclopedic knowledge*.¹¹³ In particular, the encyclopedic knowledge plays a primary role for the purpose of narrowing down the ambiguity of the specific listeme. On the one hand, part of the contextual information derives its actual content from the encyclopedic knowledge of the speaker and the potential hearers (e.g. the subject matter of the utterance, the capacity of the speaker, etc.) and, on the other hand, the various concepts associated with the specific listeme may be comparatively assessed against the background of the utterance context only where each of them has been already analysed and understood in its own context, i.e. in the framework of the encyclopedic knowledge field to which such concept pertains. However, it must be kept in mind that the process of narrowing down the ambiguity of the specific listeme by discharging the meanings that do not respond (or correspond) to the context requirements, i.e. that are not sensible in the actual context, is not a mechanical task, but implies the hearer's discretionary assessment of the various significant factors.¹¹⁴

¹¹¹ This type of ambiguity is analysed in section 4 of this chapter.

¹¹² The concept of "context" will be expanded in the following sections.

¹¹³ These elements partially overlap with those previously mentioned as relevant for the purpose of determining whether the speaker has adopted a certain jargon. Such a partial overlap emphasizes the fact that in both cases the context plays a major role.

¹¹⁴ In linguistic terms, that activity represents a pragmatic assessment.

3. The characteristics of concepts

3.1. Introduction

“Meaning in natural language is an information structure that is mentally encoded by human beings”¹¹⁵

Human beings have knowledge of the world they live in and think about through specific mental processes, which work as lenses put between them and such worlds. From the human perspective, there is no other knowledge than that acquired by means of these mental processes.¹¹⁶ Through such processes, which are generally labeled as perception and cognition, people (i) elaborate ideas and mental images that are part of abstract or metaphysical worlds, (ii) decrypt the information received from the external world through the senses and (iii) organize all these ideas, images and information in the form of data that are categorized according to mental schemes biologically and culturally driven. These mental schemes consist of concepts and the intricate net of relations existing among such concepts. Concepts and the relations among them are not *a priori* schemes for categorizing knowledge data; on the contrary, they are the product of human cognitive processes that, in turn, are influenced by the very same knowledge data that such schemes are used to categorize.

In this perspective, social and cultural differences, as well as differences in life experiences between various communities do have a significant impact on the actual shape that concepts and relations among concepts tend to assume within such communities. The interaction, however, is biunivocal. In fact, the specific pattern of concepts and relations among them that characterizes a specific community is a fundamental part of its cultural legacy and, as such, is transmitted through the generations and contributes to informing both the social life of the community and the way in which experiences, facts, things are looked at and approached.

From a linguistic standpoint, cognitive linguists have advanced the hypothesis that language (including grammatical structures and rules) is constrained and informed by the relations that human beings (i) perceive in nature, (ii) experience in the world they inhabit, and (iii) conceive of in abstract and metaphysical domains.¹¹⁷ More specifically, the idea upheld by cognitive linguistics is that the way in which people perceive the worlds and conceive of them informs their linguistic categorization (by means of concepts).

The most relevant consequences of such premises are the following.

¹¹⁵ R. Jackendoff, *Consciousness and the Computational Mind* (Cambridge: MIT Press, 1987), p. 122.

¹¹⁶ On the relation between the world (things and facts), cognition and language, the best reference is L. Wittgenstein (translated by D. F. Pears and B. F. McGuinness), *Tractatus Logico-Philosophicus* (London: Routledge, 2001).

¹¹⁷ J. R. Taylor, “Cognitive Semantics”, in K. Allan (ed.), *Concise Encyclopedia of Semantics* (Oxford: Elsevier, 2009), 73 *et seq.*; K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), pp. 247 and 288.

First, the meaning of language expressions reflects the speaker's perception and cognition of the denotata, his perception being heavily influenced by the cultural and social environment where he has grown up and has lived.¹¹⁸ In particular, concepts and the related mental categorizations reflect human needs and purposes and are constructed on the basis of the speaker's personal point of view in the specific situation he is living in (space and time-wise), which in turn is greatly influenced by the surrounding cultural and social environment. Concepts and categorizations, on the other hand, influence the language spoken in that specific cultural and social environment, the language being the means used in order to communicate thoughts that are the result of cognitive processes based on the above concepts and categorizations. The perceptions that different people have of the same phenomenon may be different as a result of the dissimilarities between their cognitive processes and their categorizations based on concepts.¹¹⁹

The perceptions differ in terms of selective emphasis, i.e. the emphasis that each person attributes to specific similarities and differences between the various phenomena that are perceived by means of the senses. The similarities and differences pertain to the various features of the phenomena and the emphasis that a certain person may attribute to such similarities or differences depends on the relevance that those features have for each of the concepts used by that very person as basis for categorizing and developing the cognitive process. Thus, the actual emphasis on similarities or differences in concrete cases mirrors the emphasis attributed to certain features rather than others in designing mental concepts.¹²⁰ In general terms, emphasis on similarities corresponds to composite concepts in respect of specific features, while emphasis on differences corresponds to individual concepts in respect of specific features. The contraposition between

¹¹⁸ This first consequence has been originally noted and developed by R. E. MacLaury under the label of "Vantage Theory" (see R. E. MacLaury, "Coextensive semantic range: Different names for distinct vantages in one category", in E. Shiller and A. Bosh (eds.), *Papers from the Twenty-Third Annual Meeting of the Chicago Linguistics Society* (Chicago: Chicago Linguistic Society, 1987), 268 *et seq.*; R. E. MacLaury, "Vantage theory", in J. R. Taylor and R. E. MacLaury (eds.), *Language and the cognitive construal of the world* (Berlin: Mouton de Gruyter, 1995), 231 *et seq.*; R. E. MacLaury, *Color and Cognition in Mesoamerica. Constructing Categories as Vantages* (Austin: University of Texas Press, 1997), p. 93). For an analysis thereof in the context of cognitive semantics, J. R. Taylor, "Cognitive Semantics", in K. Allan (ed.), *Concise Encyclopedia of Semantics* (Oxford: Elsevier, 2009), 73 *et seq.*; K. Allan, "Categorizing Percepts: Vantage Theory", in K. Allan (ed.), *Concise Encyclopedia of Semantics* (Oxford: Elsevier, 2009), 51 *et seq.*

¹¹⁹ This is particularly evident when the approaches of different cultures to the process of cognitive construction of what is perceived are compared. Since the cognitive construction of what is perceived is strictly related to the mental categories and concepts used in such a process and these mental categories and concepts are named for communication purposes, in order for people within a speech community to understand each other, there are agreed conventional names used that correspond to agreed conventional mental categories and concepts, which in turn correspond to generally agreed approaches to the process of cognitive construction within that community. When different communities are at stake, in cases where such communities are not (or have not been for a long time) in the necessity to communicate with each other, the above described reason for a convergence of language expression and therefore of concepts and approaches to the process of cognitive construction are missing and, as a result, such approaches and the resulting categorizations and concepts appear sometimes significantly distant (see K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), pp. 287 *et seq.*).

¹²⁰ See the various examples on color perceptions and classification provided in the literature concerning the "Vantage Theory" quoted in footnote 118.

composite and individual concepts is, in turn, echoed at the language level by means of corresponding listemes. From a dynamic perspective, the shift in emphasis from similarity to difference, and vice-versa, does not occur for no reason. People must have a reason to perpetrate a cognitive change,¹²¹ which is generally culturally and socially driven.

Second, since perception and conception are products of the human mind and body, the latter may be considered to constrain and inform language and linguistic categorization. Indeed, language appears to be clearly anthropocentric,¹²² in that human beings are used to describe the world of their experience by reference to the human body and their everyday experiences and to adopting the human body and its parts as a basis for describing and measuring other things in the world around them, as well as pure metaphysical concepts (such as “legal person”, “arm’s length”, “company residence”, just to give some of the possible examples from the English tax law language). It is the above-mentioned human-centeredness of human cognition that leads to the human-centeredness of the language, since the latter, as already mentioned more than once, just reflects human cognition.

Third, the distinction between lexicon knowledge (i.e. semantic specifications of listemes provided by dictionaries) and encyclopedia knowledge is superseded. According to Jackendoff, for example, knowing the meaning of a word that denotes a physical object includes knowing what such an object looks like; the traditional-style lexicon entry is a partial, insufficient representation of the concepts associated with listemes, since conceptual structure must also contain a partial three-dimensional model structure based on visual (and other sense) perception.¹²³ All in all, there is a “single level of mental representation, *conceptual structure*, at which linguistic, sensory, and motor information are compatible”¹²⁴ and the semantic specifications (dictionary meaning) of a listeme are just one part of the conceptual structure corresponding to that listeme.¹²⁵ The additional information that characterizes the concept is encyclopedic in nature, not lexical. The same idea may be expressed in terms of *conceptual frames*, which may be described as systems identifying and encompassing the characteristic features, attributes and functions of a specific concept and its characteristic interactions with other concepts necessarily or typically associated with it. Under this perspective, a listeme meaning can be understood only with reference to its background frame, which

¹²¹ R. E. MacLaury, *Color and Cognition in Mesoamerica. Constructing Categories as Vantages* (Austin: University of Texas Press, 1997), p. 93.

¹²² K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), pp. 289-290.

¹²³ R. Jackendoff, *Consciousness and the Computational Mind* (Cambridge: MIT Press, 1987), p. 201; R. Jackendoff, *Semantics and Cognition* (Cambridge: MIT Press, 1983), p. 139.

¹²⁴ R. Jackendoff, *Semantics and Cognition* (Cambridge: MIT Press, 1983), p. 17.

¹²⁵ In this context, it should be noted that the semantic specifications of most of the listemes is distilled from encyclopedic information about the salient characteristics of the concepts corresponding to such listemes and that lexical information is recognized to be just one kind of encyclopedic information (i.e. lexical knowledge is a part of the encyclopedic knowledge) (see K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), p. 101).

elucidates (and is the reason for) the concept that the listeme encodes. Also in this case, most of the information encoded in the framework is of an encyclopedic nature: in particular, the interactions among concepts and the role played by one concept in relation to others are part of the encyclopedic knowledge of the language users.¹²⁶

Against this background, the author, after having drawn some preliminary distinctions among certain terms that will be repeatedly used in the remainder of this chapter, proceeds to analyse which are the structural characteristics of concepts according to the leading linguistic theories.

3.2. *Reference, denotation, intension and extension*

At the outset, it is necessary to draw a basic distinction between *reference* and *denotation*. Such a distinction, although described and relied on inconsistently by scholars, may be sketched in the following terms for the purpose of the present study.¹²⁷ The *referent* of a listeme in a certain utterance is what the speaker actually wants to point at when using that listeme in that utterance (a particular entity, event, time, thing, etc.). The referent is, therefore, something intimately connected with the meaning that the speaker wants to convey.¹²⁸ *Denotation*, on the other hand, refers to the theoretical relation between listemes and concepts, to which in turn the things or events in the specific world spoken of may correspond or not.

A good example for figuring out the difference between reference and denotation is represented by the case of a speaker erroneously using a certain listeme. Consider a speaker using the listeme “dog” while pointing at a cat and assume that the meaning of the listeme “dog” agreed upon by the speaker and all the hearers of that utterance is something like “a domesticated animal of the canidae family”. In such a case the referent of the listeme “dog” uttered by the speaker is a cat; the fact that it appears impossible to bring a cat within the meaning of the listeme “dog” does not change the fact that the speaker, when uttering “dog” intended to make reference to the cat. On the other hand, the denotata of the listeme “dog” are all the items that are within the scope of the concept of dog corresponding to that listeme, among which the cat actually pointed at by the speaker does not figure. Clearly, when more than one concept corresponds to a certain listeme, the related denotata may vary greatly among each other and may be theoretically grouped into clusters, each of which corresponding to a different concept.¹²⁹

¹²⁶ K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), pp. 252 *et seq.*

¹²⁷ A similar distinction, although by means of different terminology, is drawn by Wittgenstein in L. Wittgenstein (translated by G. E. M. Anscombe), *Philosophical Investigations* (Oxford: Blackwell, 1953), p. 18.

¹²⁸ K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), p. 46. On *reference* and its relation with linguistic expressions, see A. Sullivan, “Reference: Philosophical Theories”, in K. Allan (ed.), *Concise Encyclopedia of Semantics* (Oxford: Elsevier, 2009), 810 *et seq.*

¹²⁹ Such a subdivision of denotata into clusters, even if theoretically conceivable, presents practical difficulties due to the vagueness of concepts, their blurred borders and the consequent difficulties of fitting certain denotata within the proper clusters. In addition, since concepts may overlap, some denotata may fit in more

The above example may be also used in order to draw a second distinction: that between *intension* and *extension*.¹³⁰ In the case just described, the listeme “dog” does not have any extension in the world spoken of¹³¹ (the world of which the speaker is uttering about at that specific time), since no denotatum of the listeme “dog” exists in the state of the affairs taken into account and described by the speaker. The listeme “dog” that has been uttered, however, does still have its own intension, i.e. the concept of dog connected thereto, which continues to exist at a metaphysical level and within whose scope are all the theoretical denotata of the listeme “dog”.¹³² When more than one concept corresponds to a single listeme, the intension of that listeme is made of the combination of all such concepts. In contrast, when a single concept corresponds to a specific listeme, the intension thereof results made of that concept. As far as the author could find out, Frege was the first one to clearly draw this distinction by referring to *Sinn* and *Bedeutung*,¹³³ which have been transposed into the listemes “intension” and “extension” by intensional logicians.¹³⁴ Frege explained the difference between *Sinn* and *Bedeutung* by means of the (now famous) example of Venus. He pointed out that the well-known “morning star” and “evening star” are, in astronomic terms, the same thing: the planet Venus that appears in the east part of the sky before sunrise and in the west part thereof after sunrise. These two expressions, although corresponding to two different concepts (“a heavenly object appearing in the east part of the sky in before sunrise” and “a heavenly object appearing in the west part of the sky after sunrise”) and, therefore, having two different intensions, have the same extension represented by the planet Venus, which is also the referent thereof.

than one cluster independently of the vagueness of the related concepts.

¹³⁰ The terms *intension* and *extension* date back to the turning of the XX century, when a discussion arose about the meaning and nature of “reality” and two opposite schools of thought faced each other in that respect, i.e. intensionalism and extensionalism. Various philosophers took positions in the course of that debate, such as Meinong, Russell and Quine. On such a debate, see among others B. Russell, *The principles of mathematics* (Cambridge: Cambridge University Press, 1903); B. Russell, “On denoting”, 14 *Mind* (1905), 479 *et seq.*; W. V. O. Quine, *From a logical point of view. Nine Logico-Philosophical Essays* (Cambridge: Harvard University Press, 1953).

¹³¹ It is worth stressing here that the world spoken of, being the world mentioned or implied in the utterance, may be the real world where the speaker is living, as well as a pure hypothetic or metaphysical world. Therefore, the extension of a certain listeme or expression in the world spoken of may be also determined on the basis of non-physical or non-actual clues, such as, for example, the assertion or negation of a complement noun phrase or of a clause connected to the listeme or expression at stake (e.g. in the utterance “we do not have a crocodile at home”, the listeme “crocodile” does not have an extension in the world spoken of, unless a different proof is given).

¹³² On *extension* and *intension* (with the warning *caveat* that the listemes “extension”, “intension”, “denotation” and their related expressions are sometimes used with meanings different from those adopted in the present study), N. Oldager, “Extensionality and Intensionality”, in K. Allan (ed.), *Concise Encyclopedia of Semantics* (Oxford: Elsevier, 2009), 301 *et seq.*

¹³³ G. Frege, “Über Sinn und Bedeutung”, in 100 *Zeitschrift für Philosophie und philosophische Kritik* (1892), 25 *et seq.*

¹³⁴ For example, R. Carnap, *Meaning and Necessity. A Study in Semantics and Modal Logic* (Chicago: Chicago University Press, 1956).

A final distinction that may be drawn is that between *sense* and *intension*: the sense of a certain listeme is generally intended by linguists to be a description of its intension by means of language expressions. So, while intension is something outside language, sense is the linguistic correspondent thereof and is, therefore, within language. Sense is no more than a translation or paraphrase of the specific listeme, which is required by the fact that we need language in order to write about language and its meaning.¹³⁵

3.3. *Linguistic theories of concepts*

That said, the problem is still to clarify what a concept is. Linguists have proposed many theories in this respect, which the author has decided to group into three main clusters: the traditional theories, the prototype semantics theory and the stereotype semantics theory.

3.3.1. *Traditional theories*

The traditional theories consider that a concept is nothing other than the characteristic set of necessary and sufficient properties for an item to be included within the scope of the corresponding listeme. Under this perspective, concepts appear to be some sort of checklists.¹³⁶ This explanation is quite intuitive, since in our daily experience we make often reference to certain characteristics or properties that a specific item presents or does not present, in order to argue and decide whether it may be considered to be within the scope of a certain listeme.

This approach has also been presented in terms of the *decomposition assumption*: the meaning of a listeme (or a more complex expression) can be exhaustively decomposed into a finite set of semantic or conceptual primitives that are together necessary and sufficient to determine the meaning of every instance of the listeme (or expression).¹³⁷

However, this approach presents certain drawbacks.

A first drawback is that it clashes with the basic observation that certain items are commonly considered to be within the scope of a certain listeme even if they do not exactly fulfill all the requirements of the checklist. For instance, nobody would seriously omit from the intension of the listeme “lion” a lion cub because he was born without a leg. At the same time, however, most people would probably agree on including the

¹³⁵ K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), p. 50.

¹³⁶ Among the upholders of the theory of concepts as checklists of necessary and sufficient conditions (features that may be decomposed), see J. J. Katz, *The Philosophy of Language* (New York: Harpen and Raw, 1966) and A. Wierzbicka, “Semantic Primitives and Semantic Fields”, in A. Lehrer and E. F. Kittay (eds.), *Frames, Fields, and Contrasts. New Essays in Semantic and Lexical Organization* (Hillsdale: Lawrence Erlbaum, 1992), 209 *et seq.*

¹³⁷ On the decomposition assumption, J. J. Katz, *The Philosophy of Language* (New York: Harpen and Raw, 1966), pp. 70 *et seq.*

property “four legs” among those that characterize the concept corresponding to the listeme “lion”.

A second drawback is that this approach does not give the appropriate relevance to the fact that certain features, recognized as pertaining to a specific concept, are nonetheless generally disregarded both when considering whether an item is within the scope of the corresponding listeme and when giving examples of that concept.

Even more interesting is the fact that certain features that do not characterize (i.e. are not necessarily included in) the concept are nonetheless generally taken into account for the purpose of determining whether an item is among the denotata of that concept.¹³⁸ Sometimes these features are taken into account for such a purpose to such a great extent that they override characteristic features of the concept in that respect.¹³⁹

3.3.2. *The prototype semantics theory*

In order to remedy to these drawbacks and explain the above-mentioned human behavior when dealing with items classification and concepts exemplification, linguists have developed a different approach, the most famous example of which is represented by *prototype semantics*.¹⁴⁰

In prototype semantics, prototypes are the most typical exemplars¹⁴¹ among the denotata of a listeme. Since more than one concept may correspond to a single listeme, the prototypicality may be seen at two different levels: (i) there may be concepts that are more typical than others as correspondent to the listeme and (ii) there may be denotata that are more typical than others within the scope of a specific concept. These “semantic” prototypes (and their typical features) are what people generally have in mind when uttering a listeme.

The basic idea of prototype semantics has been clearly pointed out by Fillmore, according to whom it consists in the following: “Instead of the meaning of a linguistic form being represented in terms of checklist of conditions that have to be satisfied in

¹³⁸ For example, the capability of flight is not a necessary feature of the concept of bird; nonetheless, it is probably the first and most important feature to come to one’s mind whenever it has to be decided whether a certain animal falls within the scope of such a concept. This is the main reason why most people are uncertain about whether penguins are denoted by listeme “bird”.

¹³⁹ With reference to the instance given in the previous footnote, the relevance attributed by some people to the the capability of flight as a distinctive feature of birds frequently leads such people to bring bats within the intension of the listeme “bird”, notwithstanding the fact that bats do not lay eggs, the latter being one of the essential features of the concept of bird.

¹⁴⁰ On prototype semantics, C. J. Fillmore, “An alternative to checklist theories of meaning”, in C. Cogen et al. (eds.), *Proceeding of the First Annual Meeting of the Berkeley Linguistics Society* (1975), 123 *et seq.*; G. Lakoff, *Woman, fire and dangerous things. What categories reveal about the mind* (Chicago: University of Chicago Press, 1987); J. R. Taylor, *Linguistic categorization. Prototypes in linguistic theory* (Oxford: Oxford University Press, 1989); R. E. MacLaury, “Prototypes revisited”, *20 Annual Review of Anthropology* (1991), 55 *et seq.*

¹⁴¹ “As good an example as can be found” according to the different definition provided by Allan (see K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), p. 335).

order for the form to be appropriately or truthfully used, it is held that the understanding of meaning requires, at least for a great many cases, an appeal to an exemplar or prototype – this prototype being possibly something which is innately available to the human mind, possibly something which, instead of being analysed needs to be presented or demonstrated or manipulated.¹⁴²

The interesting point of such a theory is that it does not try to modify the actual definitions provided by dictionaries or to criticize the idea that a listeme might correspond to a theoretical concept, i.e. its meaning, but it turns the attention to the processes of learning the meaning of listemes and using listemes in practice. The prototype semantics theory puts under the spotlight the fact that, within the scope of a certain listeme (or one corresponding concept thereof), items that may be considered prototypical (e.g. a sparrow with reference to the listeme “bird”) generally coexist with others that are peripheral (e.g. an emu with reference to the listeme “bird”) and that prototypical and peripheral items are not given the same attention by people when deciding to use a certain listeme rather than another and when attributing meaning to an utterance.

A corollary of such an argument is that prototypes may vary space-wise and time-wise, depending on changes in culture and customs. Furthermore, even in an environment that is well identified from a spatial and temporal perspective, cultural differences may have an impact on the choice of prototypes, typical examples thereof being the differences in the level of education and in the profession carried on.

For the sake of fairness, on the other hand, it should also be mentioned that the idea of people reasoning in terms of prototype(s) of a certain category of items seems to lose part of its strength in relation to listemes denoting very general categories. These categories, usually named by superordinate listemes with many hyponyms (e.g. “vegetable”), do not have such clear and convincing prototypes as “basic level categories” (e.g. “carrot”). However, in these cases, a function similar to that of prototypes is played by the strong family resemblances typically existing among the category members,¹⁴³ in particular by the limited number of features common to most of them, which therefore become essential for the purpose of identifying the intension of the listeme.¹⁴⁴

3.3.2.1. Prototype semantics and language vagueness

¹⁴² C. J. Fillmore, “An alternative to checklist theories of meaning”, in C. Cogen et al. (eds.), *Proceeding of the First Annual Meeting of the Berkeley Linguistics Society* (Berkeley: Berkeley Linguistics Society, 1975), 123 et seq., at 123.

¹⁴³ L. Wittgenstein (translated by G. E. M. Anscombe), *Philosophical Investigations* (Oxford: Blackwell, 1953), 66-71.

¹⁴⁴ Obviously family resemblances increase at lower level of categorization, where the categories are more specific.

Prototype semantics has also proved useful in analyzing *vagueness*. Vagueness may be defined as the particular kind of uncertainty about the applicability of a *predicate*¹⁴⁵ to a specific thing or state of affairs.¹⁴⁶

The main issue raised by vagueness consists in whether a certain item falls within the scope of a certain concept, i.e. whether that item is denoted by the listeme corresponding to that concept. Although the standard example of vague listemes and predicates is that of gradable adjectives, such as tall, fat, large, etc., members of other lexical categories may be vague as well. In general, any grammatical element whose applicability to a specific thing or state of affairs requires perception, categorization, or judgment of gradient contingent facts suffers from an incurable susceptibility to vague uncertainty.¹⁴⁷

Furthermore, vagueness is often contagious, in the sense that complex language expressions built up from vague listemes are often themselves vague as result.¹⁴⁸

What generally does make a certain predicate vague is that it has borderline cases and seems to lack sharp boundaries: thus, it appears not to have a well-defined extension. In this respect, vague predicates give rise to what are known as sorites¹⁴⁹ paradoxes, the most famous of which is that of the heap, which may be summarized as follows.¹⁵⁰

Imagine you have a heap of sand before you and remove a single grain from it. You would certainly say that you still have a heap of sand before you after you removed that grain. However, if you accepted such a premise and continued to remove the grains from the heap, one by one, you would end up with a single grain, which then – absurdly – would be a heap as well.

Similar paradoxes may be constructed for any vague predicate; instead of the grains of sand, the paradoxes would be based on the more or less significant presence of one or more features that characterize the concept corresponding to the predicate at stake. Consider, for instance, the noun “man”. The distinction between a boy and a man is mainly one of age. Assume we take somebody that, at a certain moment, is considered by everybody to be a boy. An hour later, he is still a boy. The same holds true if we wait for another hour and then we look at him again. Therefore, one could conclude that he will never become a man. Even less an old man. That would be pleasant, but, unfortunately, that’s not (yet) the case. Consider the place of business of an entrepreneur.

¹⁴⁵ A predicate may be defined as a language expression, composed of one or more listemes, which may be true of something in the *world spoken of*.

¹⁴⁶ Similarly C. Barker, “Vagueness”, in K. Allan (ed.), *Concise Encyclopedia of Semantics* (Oxford: Elsevier, 2009), 1037 *et seq.*, at 1037.

¹⁴⁷ C. Barker, “Vagueness”, in K. Allan (ed.), *Concise Encyclopedia of Semantics* (Oxford: Elsevier, 2009), 1037 *et seq.*, at 1037.

¹⁴⁸ C. Barker, “Vagueness”, in K. Allan (ed.), *Concise Encyclopedia of Semantics* (Oxford: Elsevier, 2009), 1037 *et seq.*, at 1038.

¹⁴⁹ The listeme “sorites” etymologically derives from the Greek word “soros”, which means “heap”. The original formulation of the paradox of the heap is generally attributed to the Megarian philosopher Eubulides of Miletus.

¹⁵⁰ R. Keefe, “Vagueness: Philosophical Aspects”, in K. Allan (ed.), *Concise Encyclopedia of Semantics* (Oxford: Elsevier, 2009), 1041 *et seq.*, at 1041.

Suppose that it is theoretically movable, but as a matter of fact it has not moved for the last fifty years. One would probably say that it is fixed. Therefore, it could be a permanent establishment under Article 5 of an OECD Model-based tax treaty, provided that the other requirements thereof were satisfied. Now imagine that the entrepreneur decides to move it one centimeter every week. The author would still be inclined to say that it is fixed. Assume that, after one year, the entrepreneur decides to move it one centimeter more every week, i.e. two centimeters every week. If it was fixed before, it should be considered fixed even after such a change for the purpose of determining whether it does constitute a permanent establishment. If the entrepreneur (and his descendants) repeated such behavior endlessly, this would lead to the absurd situation in which the place of business would be considered fixed even where moving, say, a hundred kilometers every week in a straight direction.

The issue arises because there seems to be no specific borderline between cases where a certain predicate clearly applies and those where it clearly does not. Moreover, the issue cannot be solved by simply recognizing that vague predicates do have borderline cases and identifying some of them. In fact, the group of borderline cases does not have sharp borders either. One could say that the group of borderline cases almost inevitably does have its own borderline cases; the latter would be borderline-borderline cases.¹⁵¹ Such analytical approach would thus prove never-ending.

Wittgenstein considered vagueness caused by the absence of a conventional regulation of listemes use: we would not know the exact boundaries of the concept corresponding to a vague listeme since none has ever been drawn.¹⁵² He found this lack of sharp boundaries perfectly justified by the fact that, in the vast majority of cases, sharp boundaries are not necessary for the listemes to be properly and effectively used.

Moreover, the absence of clearly drawn boundaries is independent from the existence of a definition of the concept or from its detailed exemplification. Both the definition and the exemplification leave the concepts, and thus the listemes, vague: the former since generally made of listemes, some of which present the very same vagueness of the defined concept; the latter since it is generally limited to a finite number of instances, therefore leaving open the possibility that some borderline cases remain in the shadow.¹⁵³

Even if it were possible to clearly draw the boundaries of a concept by means of a definition, the issue would remain of the existence of agreement on such a definition. According to Wittgenstein, if “someone were to draw a sharp boundary I could not acknowledge it as the one that I too always wanted to draw, or had drawn in my mind. (...) His concept may then be said to be not the same as mine, but akin to it. (...) The

¹⁵¹ This phenomenon is generally known as “higher-order vagueness” (see C. Barker, “Vagueness”, in K. Allan (ed.), *Concise Encyclopedia of Semantics* (Oxford: Elsevier, 2009), 1037 *et seq.*, at 1040; R. Keefe, “Vagueness: Philosophical Aspects”, in K. Allan (ed.), *Concise Encyclopedia of Semantics* (Oxford: Elsevier, 2009), 1041 *et seq.*, at 1041).

¹⁵² L. Wittgenstein (translated by G. E. M. Anscombe), *Philosophical Investigations* (Oxford: Blackwell, 1953), p. 28, paras. 68-69.

¹⁵³ L. Wittgenstein (translated by G. E. M. Anscombe), *Philosophical Investigations* (Oxford: Blackwell, 1953), p. 29, para. 71.

kinship is just as undeniable as the difference”.¹⁵⁴ He compared such a kinship to that existing between two pictures, one of which consists of color patches with vague contours and the other with patches similarly shaped and distributed but with clear contours. For Wittgenstein no one may say that the picture with clear contours rightly corresponds to the blurred one. Many different pictures with clear contours could go along well with the blurred picture; this means that there is no right definition, but just many possible ones.¹⁵⁵ He based this conclusion on the perception that, although the vast majority of people forming a linguistic community generally agree upon the core, typical situations that fall within the scope of a concept, other situations are considered to be covered by that concept by certain people, but not by others.¹⁵⁶

This approach to the description and actual use of concepts very closely resembles that adopted in prototype semantics. Transposing the thoughts of Wittgenstein in the field of prototype semantics, one could conclude that, whenever people have to use a concept in practice, (i) they first check whether the actual situation at stake matches the prototypical situations of that concept and, if this is not the case, (ii) they assess whether the analogies between the prototypical situations and the actual situation at stake are strong and numerous enough to justify that an exception to the prototypical situations is included within the scope of that concept. It is a matter of family resemblance, where the resemblance is discretionarily assessed by each individual and the prototypical situations are used as yardstick for the family. The family resemblance is therefore assessed on the basis of the similarities existing between the features believed to be salient in the prototypes and those perceived in the potential denotata.

This is substantially the position taken by Lakoff, according to whom the relevance of prototypical situations may be explained in large part as being due to the effects of idealized cognitive models. I.e. domains are organized with an ideal notion of the world, which may fit one's understanding of the world either perfectly, very well, pretty well, somewhat well, pretty badly, badly, or not at all. The ideal notion of the world consists of prototypes. He gives the example of the listeme "bachelor", which, although commonly defined as "unmarried adult male", has been created with a particular ideal of what a bachelor is like, i.e. the bachelor prototype: an adult, uncelibate, heterosexual, and promiscuous man. People typically agree in considering the males presenting the above prototypical qualities as denoted by the listeme bachelor. However, this is no longer the case with regard to borderline cases, such as that of sexually active seventy-year-old tycoons, who might be considered by some person as having been denoted by the listeme¹⁵⁷ and by some others as not denoted. Moreover, most people would tend to exclude from the concept of bachelor certain individuals that,

¹⁵⁴ L. Wittgenstein (translated by G. E. M. Anscombe), *Philosophical Investigations* (Oxford: Blackwell, 1953), p. 31, para. 76.

¹⁵⁵ L. Wittgenstein (translated by G. E. M. Anscombe), *Philosophical Investigations* (Oxford: Blackwell, 1953), p. 31, para. 77.

¹⁵⁶ See, by analogy, L. Wittgenstein (translated by G. E. M. Anscombe), *Philosophical Investigations* (Oxford: Blackwell, 1953), p. 52, para. 156 *et seq.*

¹⁵⁷ In this case, the sexually active seventy-year-old tycoon would be considered an exception to the prototype.

although apparently falling within the scope of the definition of "unmarried adult male", do not bear much resemblance to the prototype, such as the Pope.¹⁵⁸

Setting the problem in this perspective, it clearly appears that a fundamental issue with regard to the effective use of vague listemes consists in determining which is the threshold generally accepted within a certain language community for considering a certain situation to be a prototype.

In fact, although from a dynamic perspective the sorites paradoxes would make it doubtful whether a threshold could ever been established, nonetheless from a static perspective it is the very same idea of prototypes, as well as the necessary premises of the same sorites paradoxes,¹⁵⁹ which lead one to conclude that a threshold usually exists. Such a threshold, which may be expressed in terms of significant presence of the characteristic features of the concepts or indirectly by means of prototypes inventory, may vary within a single language community from one subgroup to another. Moreover, it may also significantly vary within a homogeneous linguistic group in a diachronic perspective, due to changes in culture and social customs.

What is of capital relevance for the present study, however, is that the threshold is context-dependent. Even within a cultural and linguistic homogeneous group taken at a certain point in time, the threshold may vary depending on the relevant comparison class¹⁶⁰ and the purpose of the utterance of which the listeme is part.¹⁶¹

All in all, the actual location of the threshold, i.e. the number and nature of the prototypes, is heavily influenced by the overall context of the utterance of which the listeme is part.¹⁶² Establishing the location of the threshold is important for determining how vague listemes are used in practice since, while the classification of a situation that is above the threshold as a situation outside the scope of the relevant concept is so infrequent that it would be commonly seen as an error of classification, the same classification of a situation that is below the threshold would be generally considered to be the result of the discretionary judgment of the person making the classification. Such a judgment could be criticized on the merit, but would not usually considered to be an error. In addition, from a mere statistical point of view, the more an actual situation is below the threshold the higher the chance is that it is classified as outside the scope of the relevant concept.

Therefore, where, *ceteris paribus*, the threshold is set at two significantly

¹⁵⁸ G. Lakoff, *Woman, fire and dangerous things: What categories reveal about the mind* (Chicago: University of Chicago Press, 1987), pp.68 *et seq.*, in particular at 70.

¹⁵⁹ E.g. the existence of something that is commonly considered to be a heap of sand.

¹⁶⁰ I.e. the class of the actual situation whose inclusion in the scope of the concept is going to be assessed.

¹⁶¹ Similarly C. Barker, "Vagueness", in K. Allan (ed.), *Concise Encyclopedia of Semantics* (Oxford: Elsevier, 2009), 1037 *et seq.*, at 1038.

¹⁶² For instance, the threshold for "ripped" is certainly different for ordinary people and for professional body-builders; the shape and dimension of the cakes actually present in a bakery is determinative in order to set the threshold for "big cake", where someone wants to order "one big chocolate cake" in that very same bakery; the way in which a certain type of business is customarily conducted (e.g. mining activity) is determinative for setting the threshold for "fixed place of business", in order to determine whether a permanent establishment exists for tax treaty purposes.

different levels in two different communities, the situations commonly denoted by the relevant listeme in these two communities differ as well. Where this is the case, one could infer that the very same listeme corresponds to two different concepts in the two different communities. Such an issue is frequent when different languages are at stake, not because of the difference between the languages used by the different communities *per se*, but for the reason that the difference of language is one of the various aspects of a more general cultural difference which may easily lead the two communities to set the thresholds of potentially similar concepts at different levels.¹⁶³

3.3.2.2. Prototype semantics, vagueness and polysemy

The above analysis of linguistic vagueness and its connected semantic issues leads the author to consider whether the borderline between polysemy and vagueness is in fact as clear as might appear at first sight.¹⁶⁴

As previously indicated, a listeme is generally regarded as polysemous where it corresponds to two or more concepts, while it is considered vague where it corresponds to a single concept whose borders are blurred. However, a vague listeme may become a polysemous one, especially where, by lowering the concept borderline threshold, new situations are perceived by the vast majority of the language community as falling within the scope of the relevant concept up to becoming prototypes thereof. As noted before, vague concepts do have prototypes around which the classes of denotata grow. Prototypes tend to attract new potential members of the class that, in turn, attract other new potential members and so on. This process may be described also in terms of the progressive lowering of the concept “borderline threshold”.

Each step in the chain of attraction just described is based on similarities, common features and links that are different as compared to those relevant in previous or successive steps of the chain.

In the first phase of each step of attraction, the new potential members of the class are borderline items: they are below the threshold and, in fact, some people within the community consider them to be denoted by the relevant listeme, while others do not. However, there is a subsequent phase in which the threshold is lowered so that at least certain of these new potential members start to be considered by the vast majority of the community to be clearly denoted by the relevant listeme. The blurred border has not disappeared, it has been simply moved to a lower level.

At a certain point of this process, the differences existing among the various

¹⁶³ This determines (i) an actual difference between the two concepts and, thus, (ii) the fact that the corresponding listemes in the two languages cannot be considered to be synonyms. The translation of one listeme by means of the other listeme will determine a (partial) change in the actual denotata of the language expression.

¹⁶⁴ On the difficulty of clearly distinguishing between homonyms, polysemes and vague listemes, see D. Tuggy, “Ambiguity, polysemy and vagueness”, 4 *Cognitive Linguistics* (1993), 273 *et seq.*

subgroups of denotata are so significant that the entire class of denotata is generally seen as composed of distinct sub-classes of denotata, sub-grouped according to their main common features and differences. These sub-classes, then, begin to be seen as corresponding to different concepts: at this point of the process, the vague listeme has become polysemous. The original vagueness of the listemes, however, has not disappeared; it has simply moved to the level of each single concept so that, in many cases, the borderline between two concepts corresponding to the same listeme appears to be blurred.

Furthermore, within such a process, the exact moment when a vague listeme becomes a polysemous cannot be determined with certainty. In general, the recognition of a former vague listeme as polysemous is conventional and established by praxis: therefore, the very same concept of polysemy is vague in nature.

Finally, also the borderlines between different concepts that are semantically related, whether or not corresponding to the very same listeme, often appear blurred in such a way that such concepts appear to merge gradually one into the other. In fact, although the prototypic denotata of each concept are clearly distinguished, borderline items may be potentially denoted by both neighboring concepts. This is the case, for instance with reference to couples of listemes such as “rug and carpet”, “cup and mug”, or “shrub and bush”.¹⁶⁵

3.3.3. *The stereotype semantics theory*

While, according to prototype semantics, prototypes in no way define concepts or categories but simply try to explain how such concepts are actually used, a different perspective has been taken by (the otherwise somewhat similar) *stereotype semantics*.¹⁶⁶

The latter upholds the prototype semantics criticism of the traditional theories, especially with regard to the notion of concepts as being checklists of features, and its idea that within the potential scope of listemes and concepts there are a core area, where the prototypical denotata are located, and a peripheral area, where non-prototypical items are situated, some of which could be considered outside the scope of the relevant listemes (or concepts) by some members of the community.

On the other hand, stereotype semantics maintains that these observations on how people actually interact with listemes are to be taken into account in order to create a better theory of what concepts are. On this basis the idea of stereotypes, intended as mental images having the features of the typical denotata, has been developed. Stereotypes are conceived as models for attributing intension to listemes¹⁶⁷ and are

¹⁶⁵ Examples taken from K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), p. 312.

¹⁶⁶ On the slightly different concept of *gestalt* see M. Wertheimer, *Productive Thinking* (New York: Harper, 1959).

¹⁶⁷ K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), p. 339; K. Allan, “Stereotype Semantics”, in K. Allan (ed.), *Concise Encyclopedia of Semantics* (Oxford: Elsevier, 2009), 939 *et seq.*, at 942.

presumed to include the prototypes thereof.¹⁶⁸

In this perspective, each concept is generally presumed to have all the attributes common to the typical denotata of the corresponding listeme. However, this presumption is not an absolute one; it simply reflects the expectations within a community and, as such, it holds true until evidence to the contrary is given.

For instance, such evidence may result from the presence of a qualifying adjective,¹⁶⁹ or from elements of the context such as certain features of the potential referent which differ from those of the stereotype although reasonably within the scope of the listeme. In this perspective, the position upheld by Putnam, according to which the meaning of a language expression is a minimum set of stereotypical facts about the typical denotatum thereof,¹⁷⁰ seems to better match the idea that concepts have a hard core and elastic peripherals.

The issue becomes therefore to distinguish between (i) the minimum set of stereotypical facts that are necessarily to be present in order for a item to be considered within the scope of a certain concept and (ii) the other characteristics that are expected to be present in the items in order for them to be included within the scope of the concept, but which may be missing in the specific case without preventing such an inclusion (e.g. the capability to fly for a bird).¹⁷¹

Such characteristics (both compulsory or merely expected), however, correspond in turn to concepts to which the same analysis in terms of stereotypical characteristics may be applied. In addition, the above-mentioned features may be characterized by vagueness. Therefore, even with regard to the minimum set of stereotypical features of a concept, the issue may arise of whether they are in fact present in the specific item under analysis. This is typically the case with reference to the features that identify a certain range of values within a larger graduate scale (e.g. “red” within the graduate scale of color, or “big” within the graduate scale of dimensions), since the edges of the range are generally blurred and vanish into the edges of neighboring ranges (e.g. the borderline between red and orange, if it exists at all, is blurred for human perception).

Finally, it cannot be forgotten that the intension of a listeme is an abstract and theoretical

¹⁶⁸ Allan gives the example of the listeme “vehicle”, whose stereotype includes the prototypical car, as well as the peripheral horse-drawn wagon (see K. Allan, “Stereotype Semantics”, in K. Allan (ed.), *Concise Encyclopedia of Semantics* (Oxford: Elsevier, 2009), 939 *et seq.*, at 942).

¹⁶⁹ Allan gives the example of the expression “blue tomato”, where the stereotype of the listeme tomato is probably “red”, but the specification introduced by the adjective “blue” makes clear that the concept corresponding to the expression “blue tomato” is characterized by the color blue matched with the other attributes of the items typically denoted by the listeme “tomato” (excluding the color) (see K. Allan, “Stereotype Semantics”, in K. Allan (ed.), *Concise Encyclopedia of Semantics* (Oxford: Elsevier, 2009), 939 *et seq.*, at 942).

¹⁷⁰ H. Putnam, “The meaning of “meaning”, in K. Gunderson (ed.), *Language, mind, and knowledge* (Minneapolis: University of Minnesota Press, 1975), 131 *et seq.* A comment of Putnam’s view is found in K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), pp. 333 *et seq.*

¹⁷¹ These characteristics have also been called “quantity implicatures” by those linguists that rethought the traditional theories on concepts in light of the criticism made by prototype and stereotype semantics (see K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), p. 321).

construction and that, in reality, the meaning attributed to a specific listeme may be different for different people: as previously mentioned, the correspondence between the theoretical intension of a listeme and the intended referent may be perfect, very good, good, pretty good, somewhat good, pretty bad, bad, non-existing and may depend upon what one knows about the referent.¹⁷²

3.3.4. *Final remarks*

In light of the above analysis, one may conclude that the correspondence between referents and listemes (via concepts) is not an exact one but is generally based on approximation, in the sense that the referents should generally present features that approximate those of the concepts corresponding to the listemes (i.e. the features of the typical denotata of those listemes), in order to be included within the scope of the latter.¹⁷³

If recognizing such an approximate correspondence is generally easy where the speaker refers to a physical item before both the speaker and the hearers,¹⁷⁴ the same does not hold true with regard to metaphysical or hypothetic items. The approximation may be even looser where the utterance refers to hypothetic future events, which may be anticipated only in their most common and general terms by the speaker,¹⁷⁵ in the sense that the person assessing whether a specific item falls within the scope of the listeme used by the speaker in his utterance should use an even looser concept of approximation in order to evaluate the correspondence between the features of the underlying concept and those of the items actually at stake.

Another interesting observation derived from the foregoing analysis is that there is sometimes a discrepancy between the intension of a listeme and its prototypes, in the sense that the latter may be characterized by features that are neither necessary nor sufficient to the former, but just ordinarily expected. This discrepancy leads to the possibility that:

- (i) when the speaker refers to a specific item existing in the world spoken of by means of an utterance, he uses a listeme whose prototype shares its most relevant characteristics (from the speaker's perspective) with the item referred, although the item referred is outside the scope of that listeme intension (e.g. the listeme "bird" is used to refer to a bat since the bird prototypes and the bat share the most relevant feature – from the speaker's perspective – of being animals capable to fly) or that, more commonly,

¹⁷² Paraphrasing G. Lakoff, *Woman, fire and dangerous things: What categories reveal about the mind* (Chicago: University of Chicago Press, 1987), p. 69; see also K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), p. 336.

¹⁷³ Similarly K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), pp. 337-338.

¹⁷⁴ For instance, where the listeme "sofa" is used in order to refer to the specific couch before the speaker and the hearers.

¹⁷⁵ This is typically the case of provisions of a law. Such a case will be analysed in more detail in section 4.4 of this chapter.

- (ii) when a speaker wants to refer to a hypothetical item, he uses a listeme whose prototypes present, as their most relevant characteristics (from the speaker's perspective), the same characteristics the speaker was thinking of as the most relevant in the hypothetical item he has in mind, although the intension of such a listeme is such as to potentially exclude some of the items that the speaker could have been willing to include in the abstract item he had in mind.

For instance, if the speaker wanted to refer to flying animals, he would probably use the listeme "bird" in his utterance, since flying birds are the most common flying animals – in the speaker's experience – and they are also the prototypes of the listeme "bird"; however, a bat, which is a flying animal and which the speaker may have been willing to include within the scope of the hypothetical item he thought of, is outside the intension of the listeme "bird". On the other hand, it is possible that the intension of the listeme used is such as to include items that the speaker was not thinking of and was not willing to include within the scope of the hypothetical item he had in mind. For example, the speaker, when uttering the listeme "bird", did not think of non-flying birds and had no intention of referring to such kind of birds by means of the listeme uttered.

Finally, prototype and stereotype semantics are useful in order to better define when two concepts, corresponding to two different listemes, may be considered similar. This is an issue of capital importance where multilingual texts have to be critically analysed. On the basis of the above investigation, the author maintains that two concepts may be considered similar:

- (i) when they share most of their prototypes, or
- (ii) in the case their prototypes are limited to a few or do not coincide, when most of the features¹⁷⁶ that characterize such prototypes do coincide or, at least, present strong similarities.

What does constitute the majority of the respective prototypes and their distinctive features which have to be taken into account for the purpose of assessing the similarity cannot be said *in vacuo*. The answer to that question depends upon:

- (a) the nature of the concepts concerned,
- (b) the context in which the listemes corresponding to such concepts are used and, in particular, the object and purpose of the utterance containing those listemes, and
- (c) the reason why those listemes and not others have been used in that context.

Similarity is, in fact, a vague concept and, as such, it is also context-dependent.

3.4. *The relations among listemes (as well as among their corresponding concepts)*

As noted in the previous section, the position taken in this study is that the meaning of a listeme may be properly grasped only with reference to a structured background of experience, knowledge and practices, which constitute a kind of conceptual prerequisite

¹⁷⁶ Including the functions typically performed by the prototypes within the relevant context.

for its understanding (i.e. the relevant encyclopedic knowledge). Speakers and hearers may be said to properly understand the meaning of the listemes used only by first understanding such *background frames* that motivate the concepts that the listemes encode. These background frames may be thus defined as those parts of the encyclopedic knowledge:

- (i) in which the specific concepts corresponding to the listemes used are relevant and
- (ii) that identify the structural relations among the various concepts encompassed therein.¹⁷⁷

Under this approach, listemes are not related to each other directly, but only by way of their link to common background frames: in this respect, the semantic relation between two listemes mirrors the underlying structural relation between the two areas of the common background frames identified by their corresponding concepts.¹⁷⁸ Since, as previously recognized, human categorization and concepts are constrained and informed by the relations that human beings perceive in nature, have experienced in the world around them, or conceive of in abstract fields (conceptual constraint), one may infer that semantic relations among listemes are also constrained and informed by the human processes of perception and conception and, therefore, by the dominant cultural and social environment. This appears in line with the conclusions reached in the previous sections on the cognitive motivation of the language structure.

From the above premises it derives that, as each concept has its own background frame that identifies the structural connections among that concept and other related concepts, so each corresponding listeme has its own *semantic field*¹⁷⁹ that identifies the semantic relations between that listeme and the listemes corresponding to the related concepts in the background frame (*semantic network*). As Allan puts it, a semantic field is structured in such a way as to mirror the structure of the *conceptual field*.¹⁸⁰

Each listeme therefore denotes, through its corresponding concept(s), a specific part of the conceptual field encompassed in the background frames. In this perspective, the differential value of each listeme, in comparison with another listeme, is given by the

¹⁷⁷ For instance, with reference to the concept of passing the ball in the soccer game, one relevant frame would be the field of encyclopedic knowledge pertaining to such a game, which also identifies the structural relations among the various concepts relevant for playing soccer (e.g. the concepts of ball, passing, goal, corner, yellow card, etc.).

¹⁷⁸ C. J. Fillmore and B. T. Atkins, "Toward a frame-based lexicon: the semantic of RISK and its neighbors", in A. Lehrer and E. F. Kittay (eds.), *Frames, Fields, and Contrasts. New Essays in Semantic and Lexical Organization* (Hillsdale: Lawrence Erlbaum, 1992), 75 *et seq.*, at 76-77.

¹⁷⁹ On semantic fields, among many, J. Lyons, *Semantics* (Cambridge: Cambridge University Press, 1977) – Vol. 1, Chapter 8; R.E. Grandy, "Semantic fields, Prototypes, and the Lexicon" in A. Lehrer and E. F. Kittay (eds.), *Frames, Fields, and Contrasts. New Essays in Semantic and Lexical Organization* (Hillsdale: Lawrence Erlbaum, 1992), 103 *et seq.*; A. Wierzbicka, "Semantic Primitives and Semantic Fields", in A. Lehrer and E. F. Kittay (eds.), *Frames, Fields, and Contrasts. New Essays in Semantic and Lexical Organization* (Hillsdale: Lawrence Erlbaum, 1992), 209 *et seq.* On the relation between semantics and background frames, C. J. Fillmore, "Frame Semantics", in K. Allan (ed.), *Concise Encyclopedia of Semantics* (Oxford: Elsevier, 2009), 330 *et seq.*

¹⁸⁰ K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), p. 258.

part of the conceptual field encompassed in the background frames that it denotes in contrast to the part thereof denoted by the other listeme.¹⁸¹ In this way, cultural and social differences among communities may lead to different partitions of the conceptual field by different communities through their respective relevant concepts, the result being that certain concepts (and categorizations) used within one community do not exactly correspond to any concept (and categorizations) used within other communities. Such a lack of equivalence between concepts is mirrored, at the language level, by the absence of true synonyms between the listemes used by the various communities, due to the correspondence existing between concepts and listemes.

A famous example of this issue was given by Rosch with regard to colors naming.¹⁸² Rosch showed that the Dani,¹⁸³ who have two basic color terms (one for cool-dark and another for warm-light) can readily distinguish and refer to the colors that have distinct names in English, but their language does not make it as easy for them as it is for English speakers. The way they do it is to compare a specific color to something in the environment (e.g. the color of a tree leaves). The presumption is that the Dani speech community, until recently, has not had any great need to make frequent reference to the same number of colors as English speech communities. This example shows that, although the sensory data in the color spectrum are the same for all human beings, the various language communities may conceptually divide the color spectrum differently from one another and, as a consequence, their respective languages may have listemes corresponding to such conceptual partitions that do not have proper synonyms in the languages of other communities. The same holds true in any field of knowledge, including tax law: for instance, different tax jurisdictions may group differently the same¹⁸⁴ types of income.

Based on this general setting, the author analyses below some of the most common types of relation existing between listemes.

*Hyponymy relations*¹⁸⁵ play a major role among the various kinds of listemes relations due to their widespread use in many branches of human knowledge. For the purpose of the present study, hyponymy relations may be considered to be those relations that connect a specific listeme with other listemes that denote a subcategory or a supra-category of the class denoted by the former listeme (e.g. blue is hyponym of color and azure is hyponym of blue).

¹⁸¹ Similarly, K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), p. 258.

¹⁸² See E. Rosch, "On the internal structure of perceptual and semantic categories", in T. E. Moore (ed.), *Cognitive Development and the Acquisition of Language* (New York: Academic Press, 1973), 111 *et seq.* An analysis of Rosch's experiment is given by K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), p. 259.

¹⁸³ People divided in tribes originally leaving in the Irian Jaya area, West Papua.

¹⁸⁴ For the purpose of the present example, two items of income may be considered to be of the same type where generated from the same source (e.g. income from playing football in a professional team, income from the sale of properties, income from teaching activity, etc.).

¹⁸⁵ On hyponymy relations, see M. L. Murphy, "Hyponymy and Hyperonymy", in K. Allan (ed.), *Concise Encyclopedia of Semantics* (Oxford: Elsevier, 2009), 393 *et seq.*

Hyponymy relations may develop along different lines, according to the elements and features taken into account in order to assess differences and similarities among the underlying concepts and denotata. Chaffin,¹⁸⁶ for example, identifies four elements of hyponymy: (i) physical similarity, (ii) functional similarity, (iii) same location, (iv) countability, but the list is not at all exhaustive.

A relevant characteristic of hyponymy relations is that they are generally transitive, but only where they are established by taking into account the very same element or feature.

Another relevant characteristic is that co-hyponyms¹⁸⁷ are contraries,¹⁸⁸ but not always contradictories, since the negation of one does not entail the other; for instance, the fact that something is not vermilion does not entail that it is scarlet, since it could be magenta.¹⁸⁹ In addition, a hyponym is contrary to the co-hyponyms of its own superordinate and with their hyponyms; for example, pigment blue, which is a hyponym of blue, is incompatible with red, as well as with magenta, vermilion, and scarlet.

The study of the hyponymy relations within a semantic field is particularly relevant where a compositional (or componential) analysis¹⁹⁰ is performed, i.e. where the sense of a specific listeme is decomposed and expressed in terms of its *semantic components*.¹⁹¹ In fact, the relations between a listeme and many of its semantic components are in the nature of hyponymy relations. For example, the “Valencia” (a type of orange fruit) does have “orange” as one of its semantic components, the latter entailing the semantic component “citrus”, which in turn entails the semantic component “fruit”. Thus, for the transitive property of hyponymy relations mentioned above, “fruit” is also a semantic component of “Valencia”. According to componential analysts, most of the listemes are analyzable in terms of semantic components and those that share one or more semantic components are semantically related, i.e. they are part of the same semantic field. Hyponymy and semantic components are the basis of the probably most common type of

¹⁸⁶ R. Chaffin, “The concept of a semantic relation”, in A. Lehrer and E. F. Kittay (eds.), *Frames, Fields, and Contrasts. New Essays in Semantic and Lexical Organization* (Hillsdale: Lawrence Erlbaum, 1992), 253 *et seq.*

¹⁸⁷ E.g. vermilion and scarlet are co-hyponyms of red.

¹⁸⁸ Two items are contraries when they cannot co-occur at the same time in respect of the same thing (contraries are therefore incompatible).

¹⁸⁹ On the relations contrary-contradictory and incompatible-antonym, M. L. Murphy, “Antonymy and Incompatibility”, in K. Allan (ed.), *Concise Encyclopedia of Semantics* (Oxford: Elsevier, 2009), 25 *et seq.*

¹⁹⁰ The first broad study on compositional analysis was carried out by Bishop John Wilkins in his *An Essay Towards a Real Character and a Philosophical Language*; his purpose was to construct a universal or “philosophical” language by categorizing all of human experience and labeling each category by a symbol (corresponding to a listeme) in his philosophical language; each of such categories is comparable to a semantic component (see J. Wilkins, *An Essay toward a Real Character and a Philosophical Language* (London: Thoemmes Continuum, 2002), quoted in K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), pp. 269-270).

¹⁹¹ In semantics, most authors distinguish semantic components from semantic primitives, the latter being those semantic components definable only circularly and by ostensive definition such as “color of the sky” in the entry for blue. The author believes that such a distinction is not relevant for the purpose of the present study and thus it is not described and analysed here. With reference to semantic primitives, see U. Weinreich, *On Semantics* (Philadelphia: University of Pennsylvania Press, 1980), pp. 50 and 300 *et seq.*

definition in jurisprudence, i.e. the definition *per genus et differentiam*.¹⁹²

The theory of compositional analysis, which determines the compositional (and hyponymy) relations among listemes that determine the sense of some of them, presents the same drawbacks in particular with reference to those approaches that present and explain the meaning of listemes as checklists of features.¹⁹³ The semantic components of a listeme are indeed nothing more than other listemes, which in turn have to be decomposed in their own semantic components. Apart from the risk, implied by such chain of semantic decompositions, that the process may end up as circular or never-ending,¹⁹⁴ the theory of compositional analysis must face the critical remarks emphasized by the prototype and stereotype semantics. In particular, the decomposition of listemes in terms of their semantic components appears over-rigid when compared with the way in which the listemes are actually used by the language community members.

The example below is enlightening in this respect.¹⁹⁵

“Bull” is the result of the semantic components “bovine” AND “adult” AND “male”; “cow” is the result of the semantic components “bovine” AND “adult” AND “female”; “calf” is the result of the semantic components “bovine” AND “young”. The three listemes analysed are within the same semantic field, are connected by hyponymy relations and present the common semantic component “bovine”. However, in dictionaries the listeme “bull” is generally given certain definitions that appear to be non-compatible with the above semantic decomposition. For example, Dictionary.com Unabridged gives, among other ones, the following definition: “the male of certain other animals, as the elephant and moose”.¹⁹⁶ This example shows that:

- (i) the idea of a semantic decomposition of listemes as such is unsatisfactory since, as the author has already pointed out more than once, each single listeme generally corresponds to more than one concept and, therefore, the (de)compositional analysis should be carried out at the level of each single concept and not at the level of the listeme;
- (ii) the compositional analysis theory cannot give account of the fact that people, when using a certain listeme, have in mind either a prototype thereof or a stereotypical image of the corresponding concept and that this fact plays a major role on how listemes are actually used and which meaning is actually attributed

¹⁹² Examples of definitions *per genus et differentiam* are that of income tax, as a tax (genus) that is applied on the income produced in the certain period of time (differentiam); or that of permanent establishment, as place of business (genus) that is fixed for a certain period of time in a certain place (differentiam). On the definition *per genus et differentiam*, see H. L. A. Hart, *The Concept of Law* (London: Oxford University Press, 1961), Chapters I, section 3; G. Tarello, *L'interpretazione della legge* (Milano: Giuffrè, 1980), pp. 194-202.

¹⁹³ In fact, upon a closer look, the compositional analysis presents the same “checklist” approach under a slightly different perspective.

¹⁹⁴ See the conclusions reached on the similar issue with regard to definitions in previous section 2.3.

¹⁹⁵ Example taken from K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), pp. 271-273.

¹⁹⁶ This is the second entry for “bull” at the Dictionary.com Unabridged. Random House, Inc. (accessed 25 Nov. 2009).

thereto in any specific utterance.

At the same time, the example is interesting since, provided that the concept corresponding to the result of the semantic components “bovine” AND “adult” AND “male” represents the prototype of the listeme “bull”, our discontent with the definition of bull as “the male of certain other animals, as the elephant and moose” clearly shows that the actual use of such meaning in an utterance would be acceptable only where the context made it crystal clear that a bovine was not being referred to.¹⁹⁷

Another interesting type of semantic relation is that existing among the listemes that name the different levels of a certain feature on a *category scale*. Category scales, with respect to which actual features may be measured, have their upper and lower ends bounded by pairs of *gradable antonyms*, which are contraries, but not contradictories, since the negation of one does not entail the other, an intermediate value of the specific feature being an acceptable alternative as well.¹⁹⁸

Many such scales are characterized by the presence in their semantic fields of more than two listemes that denote different values on the scale itself. Such listemes have a relative order in the comparative scale and their meaning may be expressed in terms of their relative position in respect of the other listemes of the scale, i.e. in terms of their reciprocal semantic relations. For example, on the category scale of temperature, which may be conceived of as being characterized by the ordinate listemes “cold”, “cool”, “temperate”,¹⁹⁹ “warm” and “hot”: “hot” means upscale of “warm”; “temperate” means non-(“hot”, “cold”, “warm”, etc.); “warm” means upscale of “temperate”; “cool” means the downscale of “temperate”, “cold” means the downscale of “cool”. However, and here is the interesting point, “warm” is generally intended neither as downscale of “hot”, nor as non-“hot”.²⁰⁰ This is because the listeme “warm” and the listeme “hot” both contain the semantic component “warm” and, more specifically, the intension of the listeme “warm” encompasses the intension of the listeme “hot”, i.e. what is hot is always warm as well, but not vice-versa. However, the *cooperative principle* requires that the use of the listeme “warm” implicates that the referent is not hot, unless the context makes crystal clear that a hot thing is referred to.

The above analysis of the relations existing among listemes, as well as among their concepts,²⁰¹ brings to the surface the fundamental reasons for the difficulties faced when translating from one language to another and when attributing a meaning to a multilingual text.

The author previously mentioned that the meaning of listemes and more complex

¹⁹⁷ For instance, this might be the case where (i) in the world spoken of there was an adult male elephant, or (ii) the speaker used the expression “bull elephant”.

¹⁹⁸ Therefore, gradable antonyms are not true antonyms (see K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), pp. 262 *et seq.*).

¹⁹⁹ In this example, temperate is considered the mid-point in the relational scale and is therefore not gradable.

²⁰⁰ The same holds true, *mutatis mutandis*, with reference to “cool”.

²⁰¹ This analysis has shown that we cannot deal with semantic relations without recourse to intensions and encyclopedia knowledge, i.e. without taking into account the perception and conception processes that language users go through.

language expressions are related to one another in a way that reflects the community's perception of relations among their denotata, i.e. the categorizations and the relations among concepts generally adopted within such a community. Different language communities and subgroups within a community may divide up "the same" sensory and purely conceptual data differently, i.e. may use different concepts and achieve different categorizations. As a result, the meanings of linguistic labels given by different communities to the same specific referents and denotata often overlap without being fully identical.²⁰² Therefore, it is very possible that in a certain language items A and B are denoted by the listeme "X" and item C is denoted by the listeme "Y", while in a different language item A is denoted by the listeme "Z" and items B and C are denoted by the listeme "W".²⁰³

4. The meaning of sentences

In the previous sections the author has analysed the relations between single listemes and their corresponding concepts, as well as those existing among listemes in their semantic fields and those among concepts in their background frames. He has also (i) investigated in detail the nature of concepts, (ii) drawn the connected distinctions between reference and denotation, on the one hand, and intension and extension, on the other hand and (iii) introduced the notions of prototype and stereotype semantics in that context. The entire analysis has developed around the agreed correspondence between single listemes and concepts, i.e. the attribution of meanings to single listemes.

However, human beings generally communicate their thoughts by means of complex utterances, which take the form of coordinated systems of sentences, through which they combine the meaning encapsulated in single listemes into complex meanings. Therefore, a primary purpose of this study should also be to investigate how meaning is conveyed by means of coordinated systems of sentences. That is the aim of the present section.

4.1. The role of grammar

The combination of the meanings encapsulated in listemes into more complex meanings is made possible by grammar, i.e. the system of rules, agreed within a specific language community, regulating how and under which conditions listemes may be combined, as well as the semantic effects of such combinations. Grammar is therefore a fundamental requisite of any language, which restricts the actual freedom of the language users to

²⁰² Similarly K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), p. 267.

²⁰³ Moreover, the difficulties are not only generated by the different division of "the same" data, but also by the fact that the data may be different, since, starting from the same basic data, certain communities build up synthetically-derived additional data while others do not (or do it differently); this phenomenon is generally due to the effect on the cognitive process of social and cultural differences (including differences in the encyclopedic knowledge).

combine listemes in the way they prefer for the purpose of conveying a meaning. Linguists have in fact emphasized that, in any specific community language, the combination of listemes in complex language expressions is significantly conditioned by the rules of grammar.²⁰⁴

The speaker's actual respect of such rules is imposed by his will to convey a message that is to be understood by the hearers. If the speaker did not conform his utterance to the rules of grammar, the risk would arise that the hearers do not understand the message and, therefore, that the purpose of the utterance is not achieved. The actual respect of such rules is thus based on mutual convenience and agreement. The content of the rules, on the other hand, is conventional in nature and generally established by praxis. This makes it difficult to identify *a priori* and to categorize the existing restrictions imposed by grammar to the process of listemes combination in any specific language community.²⁰⁵ Some of the basic rules of grammar associated with listemes, however, are seen in the morphosyntactic specifications of most dictionaries' lexicon entries.²⁰⁶

From what was just stated it follows that each language has its own conventional grammar,²⁰⁷ with its distinguishing features and patterns, such as the rules governing the use of anaphoras, subjunctives and negations, the need to express the copula, the types, purpose and functioning of quantifiers (such as the English most, each, every, none, etc.),²⁰⁸ the distinction between countable and uncountable,²⁰⁹ or definite and indefinite, the existence of phrasal verbs and idioms.²¹⁰

The central role of such specific sets of grammar rules for the purpose of

²⁰⁴ E.g. K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), p. 254.

²⁰⁵ E.g. K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), p. 257.

²⁰⁶ This is the case, in particular, with regard to the category features (e.g. the categorization of the listeme as noun, verb, article, etc.) and other morphosyntactic categories strictly connected to the listeme (e.g. the presence of a noun-phrase object with reference to syntactically transitive verbs; the paradigm of a certain lexeme).

²⁰⁷ This conclusion is also upheld by those linguists that, following the Chomsky's approach, maintain that, in addition to specific languages grammars, a universal grammar exists, which is common to all languages since it is innate in the human mind in the form of a mental structure. See, for instance, the discussion on the relation between universal grammar and specific languages' grammars (and the related distinction between *deep structure* and *surface structure* of linguistic expressions) in N. Chomsky, *Aspects of the Theory of Syntax* (Cambridge: MIT Press, 1965).

²⁰⁸ It should be emphasized that quantifiers are often a source of ambiguity, due to the syntactic rules governing their use. Consider, with regard to English quantifiers, the paradigmatic case illustrated by Allan with the clause "everyone loves someone", which could be interpreted either as "each person loves at least some other person" or as "some people are loved by everybody" (see K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), p. 461).

²⁰⁹ An interesting example of the different rules concerning the use of countable nouns in the grammars of different languages is the following. In English it is possible, and not infrequent, that a verb in the plural governs a subject noun in the singular (so-called "number discord"), for example when there is a collectivizing phenomenon in which the absence of the plural inflexion in the subject is due to the fact that the referents are not perceived to be significant as individuals by the speaker. This is often the case where large groups of animals are at stake. In Italian, on the other hand, such number discord is generally not allowed.

²¹⁰ Idioms may be defined as multi-word listemes (i) that look like phrases or clauses and (ii) the meaning of which is figurative and not predictable from the literal meaning of the their constituents.

attributing meanings to utterances may be illustrated by the following example.²¹¹ Consider the English utterance “The toves gimbled in the wabe”. The words used therein are *per se* nonsense and, as a consequence, one would expect the utterance to be completely lacking of any communicative power. However, “toves” is clearly a plural noun and therefore denotes more than one entity; “gimbled” is the past tense of a verb and so denotes an act or state in the past of the toves, which are the subjects of the verb; “wabe” is a noun, given that it follows the article “the”; in addition, since it falls within the scope of the preposition “in”, “wabe” identifies a place or time. If the clause were uttered in a well-defined context, such (grammatical) information could perhaps allow the hearer to guess its meaning.²¹²

Interestingly, it may be noted that, while speakers start their communicative process from specific semantic specifications (meanings) and try to express them by means of combining listemes according to rules of grammar, hearers on the contrary start their understanding process from specific formal (listemes) and morphosyntactic (grammatical clues, such as those discussed in the above example) specifications and try to grasp the message that the hearer intended to convey. For the purpose of understanding the meaning of an utterance, as well as of interpreting a legal text, therefore, grammatical aspects represent a crucial starting point of the analysis.

4.1.1. *The combination of listemes: morphology and syntax*

In general terms, the listemes combination may assume two basic forms:

- (i) the combination of two or more listemes in a single *lexeme* (e.g. the word “dogs” is obtained by combining the listemes “dog” and “-s” and both “dog” and “dogs” are two forms of the same lexeme), which is regulated by morphology;
- (ii) the combination of different *lexemes* into phrases, clauses and sentences, which is regulated by syntax.²¹³

In light of this, it is thus necessary to introduce the concept of *lexeme*.

Lexemes²¹⁴ are members of particular lexical classes (such as nouns, verbs, adverbs, adjectives, etc.), which derive their morphosyntactic specifications and their functions from their very same inclusion in such classes. They are independent linguistic items from both a semantic and syntactic standpoint, in the sense that their meaning unitarily derives from their whole form and that they generally prohibit the insertion

²¹¹ The example is taken from K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), p. 81. Scientific writings on the relation between grammar and meaning are full of similar examples, the most famous of which is probably “colorless green ideas sleep furiously”, used by Chomsky as an instance of a grammatically correct but senseless sentence (see N. Chomsky, *Syntactic Structures* (The Hague: Mouton, 1957), pp. 15 *et seq.*).

²¹² On the relevance of grammar in the process of meaning attribution, R. Jackendoff, *Architecture of the Language Faculty* (Cambridge: MIT Press, 1997), in particular Chapter 4.

²¹³ Interestingly, the listeme *syntax* derives etymologically from the combination of the ancient Greek listemes “syn” and “taxis”, which may be translated as “ordering together”.

²¹⁴ On lexemes, K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), pp. 119 *et seq.*

(and extraction) of linguistic elements in (and from) their boundaries by means of syntactic processes. A lexeme may take different forms (e.g. the singular and plural forms) while still remaining the very same lexeme.²¹⁵

Sometimes lexemes may have the appearance of phrases, from which, however, they must be distinguished since the latter are not part of any lexical class and are not semantically and syntactically independent items. For example, the expression “man in the street” may refer to both (i) the lexeme *man in the street* (occasionally written as “man-in-the-street”), which is a noun bearing the meaning of “the ordinary person” and (ii) the phrase *man in the street*, composed of the distinct lexemes “man”, “in”, “the” and “street” and meaning “the man who is in the street”. This phenomenon contributes to increasing the ambiguity of the utterances where such expressions are used.

4.1.2. Morphology

Turning to morphology,²¹⁶ it must be initially pointed out that its basic tools are *morphs* and *morphemes*. The latter term refers to the abstract theoretical concepts representing the smallest units of morphological analysis bearing an autonomous meaning. The former term, on the contrary, indicates the forms that morphemes assume. For example, in the word *cats*, “-s” is the morph of the *plural morpheme*, i.e. of that morpheme that allows the switch from the singular to the plural of a word.

Morphemes may be distinguished as *free form* and *bound form* morphemes.

The former are those that can stand alone within a sentence according to the current grammatical rules, while the latter are those that cannot. An example of free form morphemes is that corresponding to the morph “cat”, whereas an instance of bound form morphemes is that corresponding to the morph “-s”.

Bound form morphemes,²¹⁷ which are always combined to other morphemes, may be divided into *inflexional* and *derivational* morphemes.

Inflexional morphemes generally add, to the meaning of the listeme (basic lexeme) to which their morphs are attached, the meaning of a secondary grammatical category (e.g. aspect, tense, mood, person, with regard to verb lexemes; number, gender, case, with regard to noun lexemes), so producing related forms of the same lexeme.²¹⁸ A typical case is represented by the above example of “cat” and “cats”: the meaning of the

²¹⁵ See the previous example relating to the words “dog” and “dogs”, which are two forms of the same lexeme.

²¹⁶ On morphology and morphosyntactic, K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), pp. 109 *et seq.*

²¹⁷ Bound form morphemes may be classified in *prefixes*, *suffixes* and *infixes*, according to the part of the basic lexeme in which their morphs are inserted (at the beginning of, at the end of and within the basic lexeme, respectively). The part of the basic lexeme that does not change when an affix (i.e. a prefix, suffix or infix) is attached thereto is generally named *stem*. For example, the stem of the listeme “make” is “mak” (which together with the suffix “-ing” creates the present participle “making” and the derived noun “making”).

²¹⁸ The lexeme remains the same even though both its meaning and its form change. See K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), p. 110.

inflected word “cats” is given by the combination of the meaning of the basic lexeme “cat” and the meaning of the bound inflexional morph “-s”. The complete set of forms that a single lexeme may assume by means of inflection constitutes the linguistic paradigm of that lexeme, whose typical examples are declension for nouns and conjugation for verbs.

Derivational morphemes, on the contrary, produce new lexemes either by changing the morphosyntactic specification of the basic lexeme,²¹⁹ or by modifying the semantic and form specifications thereof (or both). An example is given by the derivation of the lexeme “happiness” (a noun) from the combination of the basic lexeme “happy” (an adjective) and the morph “-ness”, corresponding to a derivational morpheme that allows the transformation of an adjective into a noun. It is interesting to note that the meaning of derived lexemes is sometimes partially independent from the meaning of their combined components, especially with regard to those derived lexemes that have been in common use for a long period of time.²²⁰ This may also be a source of ambiguity, where the independent meaning of a derived lexeme co-exists with the meaning thereof determined by mingling the meanings of the combined listemes.

A particular type of derivational morpheme is the *zero-derivation (conversion)* morpheme, so called since it is not associated with any morph and, therefore, has no form.²²¹ When attached to an existing lexeme, the zero-derivation morpheme causes it to shift its lexical class and, therefore, to change its meaning and become a different lexeme. Consider the instance of the noun “metal”, which is transformed into the verb “metal” by a zero-derivation morpheme. As a result of such a transformation, the derived lexeme adopts the syntactic function and the regular inflexional morphology of the new lexical class. The existence in a grammar of zero-derivation morphemes is an additional source of ambiguity, due to homonymy of the derived and original lexemes. It is true that, in most cases, the different syntactic functions thereof, together with the actual structure of the utterance where the lexeme appears, makes it clear which is the meaning to be attributed to the lexeme. However, there are cases where the ambiguity deriving from the correspondence of forms between two lexemes cannot be cleared by means of a mere grammatical analysis. This may be the case, for instance, with regard to the use of adjectives and verbs having the same form. Consider the following example: the word “broken” may represent the adjective “broken”, as well as the past participle of the verb “to break”. However, no equality of meaning corresponds to the equality of form, since the adjective “broken” does have a stative denotation (it refers to something that is and was already broken before), while the past participle “broken” does have a non-stative denotation (it refers to something that is getting broken at the time spoken of by the utterance). In order to untie the semantic knot in this case, it is necessary to rely on all

²¹⁹ See the example of zero-derivation morphemes discussed below.

²²⁰ See the examples concerning the derived lexemes “womanize” (“woman” and “-ize”) and “computerize” (“computer” and “-ize”) given in K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), p. 112.

²²¹ On zero-derivation morphemes, K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), pp. 113 *et seq.*

the available information, mainly of a pragmatical nature.²²²

Finally, the formation of new lexemes by means of combination may also be achieved through the different process of compounding, which consists in creating compound polyword expressions that are regarded as lexemes. An example of compounded lexeme is the above-mentioned “man in the street”; another could be “beneficial owner”, as used in tax treaties.

4.1.3. *Syntax*

When the focus of the analysis is shifted from the creation of lexemes to the creation of phrases, clauses and sentences, the object of the study becomes syntax, i.e the agreed set of rules regulating the aggregation of lexemes into semantically sensible groups.

The basic form of semantically sensible groups of lexemes is the *phrase*, which consists in a polyword expression that is not member of any lexical class and whose meaning may be consistently determined on the basis of the meanings of its formal components.²²³ An example of a phrase is the following: a black crow (noun phrase).

Phrases (or single lexemes) are combined to form *clauses*, which consist in semantically coordinated groups of words built around a predicate (mostly explicit) and its (explicit or implicit) subject. Clauses may be distinguished in *independent* and *subordinate* clauses. The former are syntactically and semantically autonomous, while the latter have to be attached to another clause in order to be syntactically and semantically acceptable.

Lastly, *sentences* are also meaningful combinations of lexemes, which may be constituted by a single independent clause, or by a coordinated group of independent and subordinate clauses. In the English language, sentences are traditionally classified on the basis on the number and type of clauses they are composed of: hence, a simple sentence consists of a single independent clause with no dependent clauses; a compound sentence consists of multiple independent clauses, joined together by conjunctions and/or punctuation, with no dependent clauses; a complex sentence consists of at least one independent clause and one dependent clause; a complex-compound sentence consists of multiple independent clauses, at least one of which has at least one dependent clause.

As for morphology, the above description of the basic components of syntax is merely indicative, since each language does have its own morphological and syntactical rules and peculiarities that are not worth analyzing in the course of this study.²²⁴ Even the relative weights that morphology and syntax bear on the process of meaning expression

²²² On what kind of information is needed to untie the knot and on how such information is actually used in the course of a pragmatic analysis, see the remainder of this section.

²²³ These two characteristics make phrases clearly distinct from compound lexemes.

²²⁴ The same holds true with reference to paragraph structure and punctuation, which bear semantic content in written language.

by means of utterance vary greatly from one language to another, certain languages²²⁵ tending to convey complex meanings mainly through syntactical combinations, while others²²⁶ do so through morphological alteration of lexemes, especially by means of inflection and derivation.

4.2. *The semantic analysis of clauses and sentences (utterances)*

Given the purpose of the present study, it does however appear more interesting to analyse more closely clauses and sentences from a semantic and pragmatic perspective, rather than from a grammatical one.

Sentences represent the most typical formal components of *utterances*, the latter being the language expressions used by speakers to communicate a certain message to one or more hearers at a certain time and in a certain place.²²⁷

Each utterance may theoretically perform various possible functions, such as stating an opinion, ordering a behavior, making a promise, etc. In most cases, however, the speaker generally wants to convey one single message to the hearers by means of it. More precisely, the speaker does not simply want to convey a message by means of the utterance; he intends to cause a specific reaction to the utterance in the hearers. In order to achieve such a result, the speaker needs the hearers to recognize the meaning of the message and, as a consequence, identify which reaction to the utterance the speaker would like the hearers to have.

To put it differently, the speaker wants to deliver a specific message to the hearers in order to stimulate a specific reaction from them and, thus, he needs to put the hearers in the best situation possible to do so. Therefore, the speaker tailors the utterance to suit the hearers, taking into account the presumed common ground, the context of the utterance and what the speaker guesses about the hearers' ability to understand the message conveyed by the utterance.²²⁸

4.2.1. *The underspecification of utterances and the role played by the overall context*

In the course of this process of utterance formation, the speaker economically underspecifies the meaning of the message he wants to convey, more or less consciously relying on the hearers' ability to correctly infer such a meaning without the need for everything to be made explicit.

In this perspective, the use of language may be certainly considered a constructive

²²⁵ These are typically labeled "isolating" or "analytical" languages (e.g. Vietnamese) (Encyclopædia Britannica. Retrieved January 29, 2010, from Encyclopædia Britannica Online).

²²⁶ These are typically labeled "synthetic" languages (e.g. Latin) (Encyclopædia Britannica. Retrieved 29 January 2010, from Encyclopædia Britannica Online).

²²⁷ Similarly K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), p. 15.

²²⁸ K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), p. 18.

and cognitive process, both from the point of view of the speaker and from that of the hearers.²²⁹ The effectiveness of the utterance, consisting in the fact that the hearers understand the meaning of the message conveyed and recognize the reaction expected by the speaker, very much depends on the speaker's ability:

- (i) to make the most accurate assumptions about the hearers (their knowledge, background experiences, etc.) and the situation existing at the moment of the interpretation and
- (ii) to properly take into account the situation of the utterance.

All in all, the effectiveness of the utterance heavily depends on how the speaker does take into account the *overall context* when constructing the utterance.

But what is exactly is such *overall context* that the speaker has to take into account and assess when formulating the utterance and the hearers will symmetrically consider when interpreting it?

This is composed by various elements, the first being the *world (and time) spoken of*. When attributing a meaning to an utterance, in fact, both the speaker and the hearers generally construct a mental model of the world (and time) the utterance is partially or totally about. Such a world does not have to be a factual one, but may be a metaphysical, imagined, desired, or supposed one. Notwithstanding this, in many cases the world (and time) spoken of is somewhat linked to the world (and time) spoken in, i.e. the world (and time) in which the utterance occurs. The relevance of the world (and time) spoken of is mainly due to the fact that, among the various meanings attributable to the utterance, the hearers tend to consider only those meanings that appear coherent and sensible, i.e. those making the world (and time) spoken of internally consistent and in accordance with common ground.

Common ground is the second element of the overall context. That is made up of:

- (i) things that should be obviously perceived and taken into account by the hearers,
- (ii) things that should be obviously inferred and taken into account by the hearers on the basis of their perceptions, their expected knowledge of the language used,²³⁰ including the common principles on behavior when communicating through language (*cooperative principles*), and their expected encyclopedic knowledge.²³¹

As a mere exemplification, common ground includes the identity and capacity of the speaker and of the potential hearers, the purpose of the utterance, the use of a specific jargon, the cooperative principles and the background and experiences of the speaker and hearers, including their encyclopedic knowledge. Moreover, one of the most relevant cooperative principles forming part of the common ground consists in the expectation, by the speaker, that the hearers will use their knowledge and will draw inferences in

²²⁹ K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), p. 25.

²³⁰ I.e. its grammar, semantics and other conventions pertaining to its functioning.

²³¹ Which includes the knowledge gained through direct experiences of the worlds around them.

order to attribute a meaning to the utterance in light of the world being spoken of. In other words, the speaker expects the hearers to make constructive inferences from their expected knowledge and constructs his utterance accordingly.²³² Common ground may vary from one language community to another and, within a community, from a sub-group to another, in the sense that in different communities and sub-groups people may be expected to know or believe in different things and to draw from them different conclusions.²³³ It is therefore important that the speaker makes the correct assumptions on what constitutes common ground within a certain community and on whether the hearers are part of such a community, so that they may be reasonably presumed to know or believe in given things.²³⁴ Finally, it is worth noting that common ground is generally presupposed by the speaker, who considers it superfluous to make it explicit.

The third element to be taken into account as part of the overall context is the *co-text*, i.e. the text that precedes and succeeds a given utterance. Co-text is significant for the purpose of identifying the world (and time) spoken of, or better specifying something within that world. It provides additional information relevant to the proper interpretation of ambiguous forms and expressions.²³⁵

These three interconnected²³⁶ elements of the overall context, where appropriately taken into account by the speaker in formulating his utterance, will ordinarily enable the hearers to reduce the ambiguity of that utterance, since just a few of the possible interpretations thereof will make sense in the overall context.

4.2.2. *The cooperative principles*

The author just described what the speaker should take into account when formulating his underspecified utterance, so that the hearers can properly understand the meaning of the message conveyed.

The issue, however, remains why the speaker should underspecify the meaning of the utterance and why he should take into account the overall context in order to properly shape it.

Looked at from a different angle, this issue consists in why the speaker should expect the hearers to appropriately use the overall context to integrate the underspecified

²³² K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), pp. 22 and 25.

²³³ See K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), pp. 21 *et seq.*, who highlights that common ground is similar to a convention, i.e. a regular behavior to which, in a given situation, almost everyone within a community conforms and expects almost everyone else to conform.

²³⁴ This implies that the relevant common ground, in particular encyclopedic knowledge, has to be shared for the most part by the speaker and the hearers.

²³⁵ For example, the ambiguity deriving from anaphors.

²³⁶ The interconnection is multidirectional: the content of the world (and time) spoken of is co-defined by the co-text and common ground, including encyclopedic knowledge; the world (and time) spoken of, in turn, guides the hearers in picking up from the lexicon and encyclopedia the information relevant for attributing a sensible meaning to the utterance (e.g. the world spoken of guides the hearers in choosing the right lexicon and encyclopedic entry for a certain language expression used in the utterance); the meaning of the utterance has to make sense in the so-defined world (and time) spoken of.

meaning of an utterance; which, in turn, implies the question of why the hearers should integrate an underspecified utterance using the overall context.

This behavior has been empirically verified by linguists, who explained it in terms of praxis within a community.

Grice,²³⁷ in particular, described such behavior making recourse to underlying *cooperative principles* that operate within a specific community and are part of the culture and social customs thereof. He formulated the general cooperative principle as follows: “make your conversational contribution such as is required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged”.²³⁸ According to Grice, this general cooperative principle, which is widespread in the vast majority of language communities, operates in two directions: speakers generally observe the cooperative principle and hearers generally assume that speakers are observing it and behave accordingly.

This allows for the possibility of *implicatures*, i.e. meanings that are not explicitly conveyed in the utterance, but that are nonetheless inferred from the overall context.

Grice distinguished within the scope of this general cooperative principle four categories of maxims that he labeled Quantity, Quality, Relation and Manner.²³⁹ The most-relevant maxims included in the four categories may be expressed as follows:²⁴⁰

- (i) *Quantity maxim* – the speaker is expected to give (no more and) no less than the information required by the hearer in order to properly interpret the utterance, the latter, in turn, being expected to draw the strongest inference possible from the utterance on the basis of the context;
- (ii) *Quality maxim* – the speaker is expected to be sincere and truthful;
- (iii) *Relation maxim* – the speaker is expected to make an utterance that is relevant in the overall context;
- (iv) *Manner maxim* – the speaker is expected to be as clear, unambiguous, brief and coherent (systematic) as possible.²⁴¹

The Gricean theory is today formalized in bidirectional optimality theory (within formal pragmatics),²⁴² according to which the hearer determines the meaning of an utterance

²³⁷ H. P. Grice, "Logic and conversation", in P. Cole and J. Morgan (eds.), *Syntax and Semantics*, vol. 3. *Speech Acts* (New York: Academic Press, 1975), 41 *et seq.*

²³⁸ H. P. Grice, "Logic and conversation", in P. Cole and J. Morgan (eds.), *Syntax and Semantics*, vol. 3. *Speech Acts* (New York: Academic Press, 1975), 41 *et seq.*, at 45.

²³⁹ Echoing Kant, as the very same author admitted (see H. P. Grice, "Logic and conversation", in P. Cole and J. Morgan (eds.), *Syntax and Semantics*, vol. 3. *Speech Acts* (New York: Academic Press, 1975), 41 *et seq.*, at 45).

²⁴⁰ H. P. Grice, "Logic and conversation", in P. Cole and J. Morgan (eds.), *Syntax and Semantics*, vol. 3. *Speech Acts* (New York: Academic Press, 1975), 41 *et seq.*, at 45-46.

²⁴¹ An interesting example of the relevance of such maxims is represented by the case, illustrated by Wittgenstein, of the possible strange and unpredictable reactions of the hearers to an utterance in which the composite expression “the broomstick and the brush which is fitted on to it” is used instead of the common lexeme “broom” (see L. Wittgenstein (translated by G. E. M. Anscombe), *Philosophical Investigations* (Oxford: Blackwell, 1953), p. 25, para. 60).

²⁴² On (bidirectional) optimality theory and its application to natural language interpretation, see, among

under two types of constraints, which may conflict with each other, i.e.:

- (i) the *semantic* (and *grammatical*) constraints, represented by the set of semantic (and grammatical) features typically associated with the terms and expressions employed in the utterance, and
- (ii) the *pragmatic* constraints, represented by the pragmatic implicatures that may be inferred from the overall context.²⁴³

Such constraints are ordered according to a strict priority ranking and any specific constraint may be violated where this is necessary in order to satisfy higher ranked constraints. Among the possible meanings that might be attributed to an utterance, the optimal interpretation, i.e. the interpretation to be preferred under (bidirectional) optimality theory, is the one that best satisfies the relevant ranked constraints, although not satisfying all of them. This means that an interpretation that violates some of the existing constraints may nonetheless be regarded as the optimal interpretation of the utterance, where it satisfies higher constraints.

Semantic (and *grammatical*) constraints (i), which are types of *faithfulness* constraints, require the interpretation to be semantically (and grammatically) faithful to the expressions used in the utterance; thus, they rank prototypical meanings higher than peripheral, or unusual meanings.²⁴⁴

Pragmatic constraints (ii), which are types of *markedness* constraints,²⁴⁵ require the interpretation not to conflict with the overall context.²⁴⁶ In bidirectional optimality

others, A. Prince and P. Smolensky, *Optimality Theory. Constraint interaction in generative grammar* (Malden: Blackwell Publishing, 2004); H. de Hoop and H. de Swart, "Temporal adjunct clauses in Optimality Theory", 12 *Rivista di Linguistica* (2000), 107 *et seq.*; H. de Hoop, "Optimal scrambling and interpretation", in H. Bennis M. Everaert and E. Reuland (eds.), *Interface Strategies* (Amsterdam, KNAW, 2000), 153 *et seq.*; R. Blutner, "Some Aspects of Optimality in Natural Language Interpretation", 17 *Journal of Semantics* (2000), 189 *et seq.*; H. de Hoop, P. Hendriks and R. Blutner, "On compositionality and bidirectional optimization", 8 *Journal of Cognitive Science* (2007), 137 *et seq.*; J. Zwarts, "Competition Between Word Meanings: The Polysemy of (A)Round", in C. Meier and M. Weisgerber (eds.), *Proceedings of the Conference "sub8 – Sinn und Bedeutung"* (Konstanz: Fachbereich Sprachwissenschaft der Universität Konstanz, 2004), 349 *et seq.*

²⁴³ See L. Hogeweg, *Word in process. On the interpretation, acquisition, and production of words* (Utrecht: LOT, 2009), p. 4.

²⁴⁴ See the use of the constraint STRENGTH in J. Zwarts, "Competition Between Word Meanings: The Polysemy of (A)Round", in C. Meier and M. Weisgerber (eds.), *Proceedings of the Conference "sub8 – Sinn und Bedeutung"* (Konstanz: Fachbereich Sprachwissenschaft der Universität Konstanz, 2004), 349 *et seq.*, at 356 *et seq.*, as modified in L. Hogeweg, *Word in process. On the interpretation, acquisition, and production of words* (Utrecht: LOT, 2009), pp. 83-85: "I propose to reformulate STRENGTH in such a way that it pertains *only* to the set of features that are associated with the form under consideration" (*italics* by the author).

²⁴⁵ I.e. constraints that require unmarked (i.e. more natural) interpretations to be preferred to marked (i.e. more complex) interpretations, provided that the speaker, in the light of the overall context, could have not expressed the resulting meaning through a less marked (i.e. more natural) expression. As Blutner puts it, an expression is blocked with regard to a certain interpretation, if this interpretation can be generated more economically by an alternative expression, i.e. if it can be generated by a less complex expression; however, linguistic and contextual factors can trigger deblocking in case they reverse the corresponding cost values (R. Blutner, "Some Aspects of Optimality in Natural Language Interpretation", 17 *Journal of Semantics* (2000), 189 *et seq.*, at 194 and 198). Similarly, under the Manner principle elaborated by Levinson, marked messages are supposed to indicate marked situations (S. Levinson, *Presumptive Meanings. The Theory of Generalized Conversational Implicature* (Cambridge: MIT Press, 2000)).

²⁴⁶ See the use of the constraint FIT in J. Zwarts, "Competition Between Word Meanings: The Polysemy of (A)Round", in C. Meier and M. Weisgerber (eds.), *Proceedings of the Conference "sub8 – Sinn und*

theory, the above-mentioned Gricean maxims are typically re-expressed in terms of *pragmatic constraints*.²⁴⁷

As the *semantic* (and *grammatical*) constraints may sometime require marked interpretations of the relevant utterances, the two types of constraints are potentially conflicting.²⁴⁸ However, *pragmatic* constraints rank generally²⁴⁹ higher than *semantic* (and *grammatical*) constraints, which entails that interpretations that conflict with the overall context of an utterance cannot be normally regarded as optimal interpretations thereof under (bidirectional) optimality theory;²⁵⁰ conversely, an interpretation based on unusual or peripheral meanings of the listemes employed in the utterance may represent the optimal interpretation, where it is the most faithful construction of the utterance not at variance with the overall context.

4.2.3. *The utterance meaning*

The role played and the linguistic effects produced by the *cooperative principles* and the *overall context*, of which the former may be considered to be part (as a component of the common ground), lead the author to conclude that there are three conceptually different levels of meaning of an utterance.

At a first level, an utterance may be said to have as many potentially correct meanings as the grammar and the semantic specifications of the listemes used allow it to have. This level is not relevant *per se*; it simply provides us with part of the raw material needed to construct the other two levels of meaning.

The second level is that of the *speaker's meaning*, which is the private meaning thought of by the speaker when constructing the utterance.

The third level is that of the meanings that the hearers may attribute to the utterance. Among the meanings of the third level, it appears particularly significant the meaning(s) that any reasonable hearer would assign to the utterance, given (i) the first level meanings of the utterance and (ii) the hearer's analysis of and inferences from the overall context (including the speaker's presumed purpose in using that particular

Bedeutung" (Konstanz: Fachbereich Sprachwissenschaft der Universität Konstanz, 2004), 349 *et seq.*, at 356 *et seq.*

²⁴⁷ See R. Blutner, "Some Aspects of Optimality in Natural Language Interpretation", 17 *Journal of Semantics* (2000), 189 *et seq.*, at 198 *et seq.*, which particular reference to the decomposition of the Gricean Quantity maxim in Q-principle and I-principle, where the former works to select the most coherent interpretation of an utterance, while the latter acts as a blocking mechanism and blocks all the interpretations of that utterance that can be derived more economically from an alternative utterance.

²⁴⁸ L. Hogeweg, *Word in process. On the interpretation, acquisition, and production of words* (Utrecht: LOT, 2009), p. 8.

²⁴⁹ See R. Blutner, "Some Aspects of Optimality in Natural Language Interpretation", 17 *Journal of Semantics* (2000), 189 *et seq.*, at 191.

²⁵⁰ See J. Zwarts, "Competition Between Word Meanings: The Polysemy of (A)Round", in C. Meier and M. Weisgerber (eds.), *Proceedings of the Conference "sub8 – Sinn und Bedeutung"* (Konstanz: Fachbereich Sprachwissenschaft der Universität Konstanz, 2004), 349 *et seq.*, at 357; L. Hogeweg, *Word in process. On the interpretation, acquisition, and production of words* (Utrecht: LOT, 2009), p. 82.

utterance). Linguists call the latter meaning(s) the *utterance meaning*.²⁵¹

Interpretative processes have the *utterance meaning* as their only possible goal (and, therefore, outcome).

In fact, the first level of meaning does not take into proper account the final goal of the utterance, which is to convey a message from the speaker to the hearers.

The second level of meaning is a private one and, as such, cannot be known by anybody except the speaker.²⁵² What the hearers may find at the end of their interpretative inquiry is the meaning that they think the speaker had in mind when formulating the utterance and that, as such, may be agreed upon by the speaker himself²⁵³ (which does not ontologically convert it into the meaning the speaker had in mind when formulating the utterance, the latter being and remaining a private, unknowable meaning, the proof of which cannot be given in any way).

Useless to say that it is possible, and actually common, that, on the one hand, different hearers find the same utterance to have different (utterance) meanings and, on the other hand, that the speaker asserts that the meaning he had in mind was different from those found out by the hearers. This creates disputes over the meaning of the utterance.²⁵⁴ These differences in meaning may be due to various factors, among which the wrong assessment by the speaker of the common ground,²⁵⁵ the fact that different hearers do not share the same common ground, the differences between the actual inference process followed by the hearers and the one anticipated by the speaker, the possible misspeaking of the speaker.

What the author has just described and analysed constitutes the background of the following analysis on how the utterance meaning is generally determined.

4.2.3.1. Determining the utterance meaning (1): propositional calculus

A first level of analysis relevant for the purpose of interpreting an utterance is that of *propositional calculus*,²⁵⁶ which characterizes analytical logic and which is based on deductive inferences.

The basis for the application of propositional calculus to language²⁵⁷ is the

²⁵¹ K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), p. 44.

²⁵² See the example of the beetle given in L. Wittgenstein (translated by G. E. M. Anscombe), *Philosophical Investigations* (Oxford: Blackwell, 1953), p. 85, para. 293.

²⁵³ For practical purposes, the utterance meaning is generally presumed to reveal the speaker meaning, unless the speaker himself makes it apparent that this is not the case. Accordingly K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), p. 44.

²⁵⁴ These disputes are more than common where the interpretation of legal documents is at stake.

²⁵⁵ In particular, his wrong assessment of the encyclopedic knowledge of the hearers.

²⁵⁶ Propositional calculus is also known as *propositional logic*.

²⁵⁷ On the application of analytical logic and propositional calculus to language, L. Wittgenstein (translated by D. F. Pears and B. F. McGuinness), *Tractatus Logico-Philosophicus* (London: Routledge, 2001); B. Russell, *The principles of mathematics* (Cambridge: Cambridge University Press, 1903); B. Russell, "On denoting",

acknowledgment that sentences are mostly formed of declarative clauses, whose meaning (*proposition*) may be either true or false, according to the well-known logical principles of excluded middle and of (non-)contradiction.²⁵⁸

Propositional calculus establishes the truth conditions and the truth deductive inferences between propositions that are joined by logical connectives. The typical logical connectives²⁵⁹ are: AND, AND/OR, EITHER ... OR,²⁶⁰ IF ... THEN, IF AND ONLY IF ... THEN.

Substantially, where applied to natural languages, propositional calculus allows us to conclude whether the meaning of a sentence composed by two or more propositions joined by logical connectives is true or false, based on whether the underlying propositions are true or false. To put it differently, it allows us to determine under which conditions, i.e. whether the underlying propositions are to be true or false, the meaning of a sentence composed by two or more propositions joined by logical connectives is true.²⁶¹

In this respect, meanings are deemed to be true when they correspond to the situation in the world (and time) spoken of. For instance the proposition “a black cat is on the table” is true if and only if there is a black cat on the table in the world (and time) spoken of, which could be the real world before the eyes of the speaker and hearers, as well as the world of a fairytale.

When the logical connective AND is used, all the propositions of a sentence joined by such a connective must be true, in order for the meaning of the sentence to be true. A well-known example, among international tax practitioners, is that of Article 15(2) OECD Model, where the three propositions under letters a), b) and c) must be all true, to make the meaning of the sentence encompassing them true and, thus, to satisfy the condition for the exclusive right to tax of the residence State.

When the logical connective AND/OR is used, at least one of the propositions of a sentence joined by such a connective must be true, in order for the meaning of the sentence to be true.

1905 *Mind* 14, 479 *et seq.*; H. Kamp and U. Reyle, *From Discourse to Logic. Introduction to Modeltheoretic Semantics of Natural Language, Formal Logic and Discourse Representation Theory* (Dordrecht: Kluwer, 1993); K. M. Jaszczolt, *Semantics and Pragmatics*, Meaning in Language and Discourse (London: Longman, 2002), Chapters 3-4.

²⁵⁸ On the principle of (non-)contradiction, according to which in a specific world and time two propositions such as “X is Y” and “X is not Y” are mutually exclusive, see Aristotle, *Metaphysics*, book IV, part 4 (see Aristotle (translated by W. D. Ross), *Metaphysics* (The Internet Classics Archive) – available online at <http://classics.mit.edu/Aristotle/metaphysics.html>); on the principle of excluded middle, according to which in a specific word and time, given a certain proposition such as “X is Y”, either that proposition is true or its negation is, see Aristotle, *Metaphysics*, book IV, part 7 (see Aristotle (translated by W. D. Ross), *Metaphysics* (The Internet Classics Archive) – available online at <http://classics.mit.edu/Aristotle/metaphysics.html>).

²⁵⁹ Logical connectives are indicated in logic with well-known symbols, such as “V” or “→”; here these symbols are dropped and the corresponding English terms are used instead.

²⁶⁰ Also known as ONLY ONE OF and OR(ELSE).

²⁶¹ Therefore, propositional calculus is limited to assigning a truth value (true or false) to sentences, consisting of propositions connected by logic connectives, on the basis of (i) the truth functions (truth logical meaning) of the logical connectives and (ii) the truth value of each proposition in the sentence.

When the logical connective EITHER ... OR is used, one and only one of the propositions of a sentence joined by such a connective must be true, in order for the meaning of the sentence to be true.

The logical connective IF ... THEN appears particularly interesting for the purpose of the present study, due to its significant rate of utilization in legal texts. It may be analysed under two different, and reciprocal, perspectives. Under the *modus ponens*, if the proposition following IF (*premise*) is true, the proposition following THEN (*conclusion*) is also true.²⁶² Under the *modus tollens*, if the proposition following THEN (*conclusion*) is false, then the proposition following IF (*premise*) is also false. However, the contrary is not true: if the proposition following THEN (*conclusion*) is true, this does not entail that the proposition following IF (*premise*) is also true.²⁶³

This holds true, on the contrary, where the logical connective IF AND ONLY IF ... THEN is used. When this is the case, if the proposition following IF AND ONLY IF (*premise*) is true, the proposition following THEN (*conclusion*) is also true; at the same time if the proposition following THEN (*conclusion*) is true, then the proposition following IF AND ONLY IF (*premise*) is also true.²⁶⁴

Propositional calculus applied to language is particularly useful in determining when a certain proposition entails another proposition. In terms of truth-value, a certain proposition may be said to entail another proposition when, if the meaning of the former is true, then the meaning of the latter is true in all possible worlds (and times). For example, for the purpose of the OECD Model, the proposition “X is a body corporate” entails the proposition “X is a company”,²⁶⁵ since whenever the former is true, the latter is also true.

Moreover, the analysis of entailment relations in terms of propositional calculus permits a simple application of the logical transitivity principle, according to which if proposition A entails proposition B and the latter entails proposition C, then proposition A entails proposition C. Expanding the above example, since the proposition “X is a body corporate” entails the proposition “X is a company” and the latter entails the proposition “X is a person”, then the proposition “X is a body corporate” entails the proposition “X is a person”.²⁶⁶

Also synonymy relations may be expressed in terms of propositional calculus: a proposition A may be said to be synonym of another proposition B if, and only if, the meaning of the former is semantically equivalent to the meaning of the latter in all possible worlds, so that whenever the former is true, the latter is also true and vice

²⁶² The *modus ponens* of the logical connective IF ... THEN is typically used in order to construct logical syllogisms, on which, Aristotle, *Prior Analytics*, book I, part 1 (see Aristotle, (translated by A. J. Jenkinson), *Prior Analytics* (The Internet Classics Archive) – available online at <http://classics.mit.edu/Aristotle/prior.html>).

²⁶³ The most effective example is that of the snoring wife: if your wife is snoring, then she is sleeping; but, luckily enough, this does not mean that every time that she falls asleep, she starts snoring too.

²⁶⁴ Symmetrically, where either of the two propositions is false, the other one is false as well.

²⁶⁵ Based on Article 3(1) OECD Model.

²⁶⁶ Based on Article 3(1) OECD Model.

versa.²⁶⁷ An example may be derived from Article 4(1) OECD Model: the proposition “X is a person who, under the laws of State Y, is liable to tax therein by reason of his domicile, residence, place of management or any other criterion of a similar nature”²⁶⁸ and the proposition “X is a resident of State Y for the purpose of this Convention” are synonyms. In fact, whenever the former is true, the latter is also true and vice versa.

Propositional calculus, however, is to a certain extent inadequate as a means of analysis of natural languages and must therefore be paired by semantic and pragmatic analysis.

The first reason for its inadequacy is that the use of logical connectives in natural languages is sometimes ambiguous. Take, for instance, the case where the conjunction “or” is used in a sentence. Does it correspond to the logical connective EITHER ... OR, therefore requiring that only one of the joined propositions is true for the sentence meaning to be true, or does it stand for the logical connective AND/OR, in which case the sentence meaning is true even where all the joined propositions are true? When this is the case, the ambiguity is generally solved by an analysis of the overall context, i.e. by means of pragmatics. A similar problem exists with reference to the conjunction “if”, which, in the praxis of many natural languages may stand for both the logical connectives “IF ... THEN” and “IF AND ONLY IF ... THEN”.

Another cause of inadequacy consists in the need to extract a proposition from the relative clause, before the propositional calculus may be applied. In other terms, propositional calculus is a type of analysis that presupposes propositions, the latter being the meanings of clauses that must be determined by the hearers. In order to construct the meanings of such clauses, the hearers cannot rely on propositional calculus,²⁶⁹ but have to carry out a semantic and pragmatic analysis on the basis of the overall context of the utterance.

Third, when the meanings of the joined clauses have been made clear by means of interpretation and the correspondence between the conjunction joining the underlying clauses and the logical connective joining the propositions is undisputed, an issue may arise as to the semantic meaning of the conjunction used. In English, for instance, the conjunction “and”, which corresponds to the logical connective AND, may be attributed the meaning of “and then” in certain instances. While its function as a logical connective is undisputed (both joined propositions must be true for the meaning of the sentence to be true), its semantic meaning, relevant for determining the utterance meaning, is not. Take, for example, the following sentence: “Foreman got hit by Ali and was knocked out”.²⁷⁰ It does not have the same meaning as “Foreman was knocked out and got hit by Ali”, although from a propositional calculus standpoint they are equivalent, since in the

²⁶⁷ Synonymy is the relation that characterizes every proper definition, where the defined term and the definition itself are synonyms in every world (and time) where the definition applies.

²⁶⁸ For ease of presentation, the references in Article 4(1) OECD Model to States, political subdivision and local authorities, as well as the contents of the second sentence of the very same paragraph and of paragraphs 4(2) and 4(3) are disregarded in the example.

²⁶⁹ In fact, as previously illustrated, the scope of propositional calculus is limited to ascertaining the truth-value relations among propositions and does not concern the extraction of such propositions from the underlying clauses.

²⁷⁰ *Ali v Foreman*, Kinshasa (Zaire), 20 October 1974.

first sentence “and” implies a causal/temporal relation between being hit and being knocked out, which is absent in the second sentence. This implied meaning is outside the scope of propositional calculus, since it concerns a different level of analysis, i.e. that of the semantic and pragmatic meaning of sentences.

4.2.3.2. Determining the utterance meaning (2): implicature relations

At the semantic and pragmatic level of analysis, *implicature relations* play a role that, at least for its significance, corresponds to that played by entailment relations in the propositional calculus.

An *implicature* is a meaning of a sentence that, although not entailed by the propositions composing the sentence, is implied on the basis of the cooperative principles and the overall context.

Implicatures may be more or less strong. They are considered to be strong whenever they cannot be canceled or denied without creating incoherence in the sentence meaning. In the opposite case, they are considered weak implicatures.

Strong implicatures are generally implicated by the very same conventional meaning of the lexemes composing the sentence, in particular by the meaning of certain conjunctions and adverbs within it. These are the kind of implicatures identified by Grice as *conventional implicatures*.²⁷¹

For example, the sentence “He is Italian; he is, therefore, brave” conventionally implicates that the speaker believes that Italians are usually brave.²⁷² This implicature is conventional since it is determined by the conventional meaning of the adverb “therefore”. It is noteworthy that the fact that the person spoken of is Italian does not entail that he is brave, since it could turn out that he is a coward although he continues to be Italian; at the same time, it cannot be said that the meaning of the sentence “He is Italian; he is, therefore, brave” entails the proposition “Italian are always (or generally)²⁷³ brave” since, if the latter is false, the former anyway proves true whenever the person spoken of is Italian and is brave. The adverb “therefore” is not a logical connective; however, since it is used to express a relation of consequence, it creates a conventional implicature.

Take the following sentence: “Sally got pregnant, but Max was pleased”.²⁷⁴ From a propositional calculus perspective, the conjunction “but” is equivalent to “and”, in the sense that both conjunctions correspond to the logical connective AND and, therefore,

²⁷¹ H. P. Grice, “Logic and conversation”, in P. Cole and J. Morgan (eds.), *Syntax and Semantics*, vol. 3. *Speech Acts* (New York: Academic Press, 1975), 41 *et seq.*, at 44-45.

²⁷² A similar example is found in H. P. Grice, “Logic and conversation”, in P. Cole and J. Morgan (eds.), *Syntax and Semantics*, vol. 3. *Speech Acts* (New York: Academic Press, 1975), 41 *et seq.*, at 44-45.

²⁷³ Here a difficulty would arise with reference to the attribution of a truth-value to a proposition where the adverb generally is used. This issue, however, lies outside the scope of the present study.

²⁷⁴ Example taken from K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), p. 190.

bear its truth function. However, “but” conventionally implicates some sort of contrast, unexpectedness, or adversity. In the above sentence, “but” conventionally implicates that Max was expected not to be happy that Sally is pregnant.

These two examples have in common that, if the implicatures did not hold true or were denied,²⁷⁵ the main sentences would somehow appear incoherent.

Weak implicatures, on the other hand, are generally the effect of the overall context of the utterance; in this perspective, they correspond to those identified by Grice as *conversational implicatures*.²⁷⁶

Consider the following sentence: “I have to work on my PhD thesis”. *Per se* it does not implicate anything, apart from the fact that the person speaking is a PhD student, working on his PhD thesis. However, when we take into account its overall context and the cooperative principles, the result may be that such an utterance implicates additional information. For instance, if the co-text includes a previous question made by a different speaker, such as “Do we watch the Cavs playing tonight?”, then the following “I have to work on my PhD thesis” seems conversationally to implicate that the PhD student is not going to watch the Cavs’ game.

However, contrary to what observed in respect of conventional implicatures, conversational implicatures may be canceled or denied without creating incoherence. In the above example, if the PhD student completes the sentence by saying “but, you know buddy, the Cavs are the Cavs”, this implicates that he is going to watch the Cavs’s game; at the same time, the denial of the previous implicature does not create any incoherence, taken the dialogue as a whole. Thus, a conversational implicature is a pragmatic and inductive inference determined on the basis of the utterance meaning that appears the most probable given the overall context.²⁷⁷

Conversational implicatures are particularly relevant for interpretative purposes because they represent the principal device for the speaker to minimize the quantity of language used, i.e. to underspecify the meaning of the utterance, and for the hearers to supplement the utterance in order to understand the meaning of the message conveyed and to be aware of the reaction expected by the speaker.²⁷⁸ For this reason, here the author briefly analyses the most common types of conversational implicature, which are *quantity conversational implicatures*.²⁷⁹

²⁷⁵ For instance: Italians are generally considered not to be brave; Max is expected to be very happy of Sally being pregnant.

²⁷⁶ H. P. Grice, “Logic and conversation”, in P. Cole and J. Morgan (eds.), *Syntax and Semantics*, vol. 3. *Speech Acts* (New York: Academic Press, 1975), 41 *et seq.*, at 45.

²⁷⁷ It may therefore be concluded that, while conventional implicatures are mainly semantic-based, since determined by the conventional meaning of the lexemes (in particular conjunctions and adverbs) used in the utterance, conversational implicatures are mainly pragmatic-based, since they are determined by the overall context of the utterance (including the operation of the cooperative principles).

²⁷⁸ K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), p. 192.

²⁷⁹ On quantity conversational implicatures and their subdivision into two distinct types, see H. P. Grice, “Logic and conversation”, in P. Cole and J. Morgan (eds.), *Syntax and Semantics*, vol. 3. *Speech Acts* (New York: Academic Press, 1975), 41 *et seq.*, at 45 *et seq.* See also K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), pp. 196 *et seq.*

Quantity conversational implicatures may be divided into two types.

The first one is generally known as *scalar implicature*²⁸⁰ and consists in the following: given any ordinate scale in the form [E1, E2, E3, ..., En], if the speaker asserts the value/item Ei in the utterance, that assertion conversationally implicates that values/items greater than Ei are not referred to by means of that utterance. For example, if Rita says “I have two cats”, this conversationally implicates that she does not have three or more cats. If, as a matter of fact, she has four, although she uttered a logical truth, she could be accused of speaking “falsely” since she has failed to observe the conventions of the normal use of the language (cooperative principles) and has misled the hearers. Scalar implicatures, as any other conversational implicature, may be cancelled (denied) without creating incoherence in the utterance.

The quantity implicatures of the second type, known as *preference conditions*,²⁸¹ are direct consequences of the *quantity maxim* of the cooperative principles, according to which the speaker is supposed to give no more and no less information than is required for the hearer to properly interpret the utterance. These implicatures are therefore strongly based on common ground, i.e. on shared knowledge and expectations in a specific community. Preference conditions based on common ground are thus generally implicated by the utterance, unless an indication of the contrary is given. The following is an instance of preference conditions. The utterance “I am looking at a bird”, said in an ordinary conversation between two men in the street (i.e. non-specialists, such as non-ornithologists) conversationally implicates that the speaker is looking at a bipedal animal with beak and feathers and which is capable of flying.²⁸² This holds true unless an indication of the contrary is given by the overall context²⁸³ and although the listeme “bird” may also denote animals incapable to fly (e.g. penguins).

It appears, therefore, that quantity implicatures may be, and often are, influenced by the conventional prototypes, within a certain community, of the listemes used by the speaker. Similarly, the use of the verb “walk” conversationally implicates “walk forward”, so that, if walking in any other direction is intended, that direction must be made explicit. Also, the use of the lexeme “transazione” in a contract concluded under Italian civil law conversationally implicates that the contracting parties intended to refer to “a legal agreement between the same parties that may be reached, by means of the reciprocal waiving of claims, in order to avoid a lawsuit” and not to a “sale” or any other “business transaction” between the parties,²⁸⁴ since (i) the former is the generally agreed technical (legal) meaning of the lexeme “transazione” within the community of lawyers and (ii) a contract concluded under Italian civil law is a legal agreement, generally

²⁸⁰ On scalar implicatures, L. R. Horn, *A Natural History of Negation* (Chicago: University of Chicago Press, 1989), p. 232.

²⁸¹ On preference conditions, R. Jackendoff, *Semantic Structures* (Cambridge: MIT Press, 1990), pp. 34 *et seq.*

²⁸² A similar example is given by Allan (see K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), p. 197).

²⁸³ For example, by the following statement by the very same speaker: “It is a penguin!”.

²⁸⁴ The term “transazione” is currently used in the Italian day-to-day and business language in order to refer to a business transaction, in particular the transfer of a right against consideration.

concluded through the intervention of lawyers.

Finally, conversational implicatures are relevant in order to reduce the ambiguity of utterances since, in the common case where a certain expression appears to be polysemic:

- (i) the cooperative principles, in particular the *relation* and the *manner maxims*, lead the hearers to presume that the speaker intended to convey a coherent and clear message;
- (ii) the coherence and clearness of the message are assessed and determined on the basis of the overall context;
- (iii) based on the above, the hearers substitute the few senses that appear reasonable in the overall context²⁸⁵ for the ambiguous expression at stake. In many instances, these senses amount to one only.

4.2.3.3. Determining the utterance meaning (3): presuppositions

Another interesting point, in the analysis of the utterance meaning, relates to *presuppositions*.

Presuppositions may be analysed and classified both in terms of entailment (propositional calculus) and in terms of implicatures (both conventional and conversational). The actual analysis and classification depends on the intrinsic feature of the specific presupposition at stake, as well as on the purpose of the analysis conducted.

For instance, the proposition “my bike is blue” entails the proposition “I do have a bike”. One could generally conclude that also the proposition “my bike is not blue” entails the proposition “I do have a bike”. However, this is not always the case. The issue here is the ambiguity of the clause “my bike is not blue”, which may express both the propositions “I do have a bike that is not blue” and “I do not have any bike, not even a blue one”. If the clause “my bike is not blue” is deemed to express the former proposition, then it is true that it entails the proposition “I do have a bike”; if it is deemed to express the latter proposition, then this is not the case. The issue, therefore, may become that of determining the meaning of the relevant clauses, i.e. which propositions correspond to those clauses. This issue may be solved by means of pragmatic analysis, taking into account the cooperative principles and in light of the overall context. For example, in the above instance, one could conclude that the clause “my bike is not blue” presupposes the proposition “I have a bike” since, unless evidence to the contrary is given by the overall context, the *maxims* of *quantity*, *manner* and *relation* would require the speaker to clearly state that he does not have any bike at all, if that was the case. However, as for every conversational implicature, the speaker could cancel that implicature by stating, for example, that in fact he does not have any bike at all.

²⁸⁵ I.e. the senses that make the message conveyed both coherent and clear in light of the overall context.

4.3. *Final remarks: the role of grammar and semantics in the formulation and interpretation of utterances*

The analysis performed in this section leads the author to devise the following two interconnected conclusions.

First, in formulating the utterance, the speaker is subject to certain potential restrictions, caused by the necessity that the hearers properly understand its meaning and, therefore, that the speaker's message is effectively conveyed.

These potential restrictions are primarily of a grammatical nature, in the sense that the lexemes, phrases, clauses and sentences that compose the utterance must fulfill the conditions of being well formed of the community language for the hearers to be able to establish the utterance meaning.

In addition, when choosing the lexemes to be used and the structure of the clauses and sentences, the speaker is potentially restricted:

- (i) by the semantic specifications of the listemes and
- (ii) by the inferences that he expects the hearers will draw from the overall context of the utterance on the basis of the cooperative principles.

Anomalies from a grammatical, semantic, or pragmatic perspective may block the ability of the hearers to determine the utterance meaning and, thus, could make impossible for the utterance to convey the intended message.

These restrictions, however, are just potential, in the sense that they create the risk for the speaker that the hearers cannot properly understand the message he wants to convey. The actual effect of these potential restrictions, that is to say the fact that the above-mentioned elements actually did operate as restrictions, making the speaker fail in conveying the intended message or obliging him to modify *ex post* the utterance meaning by means of an additional utterance, may, however, be assessed only synthetically and *a posteriori*, i.e. on the basis of the actual structure of the utterance and of the actual overall context thereof.²⁸⁶ Consider the following instance: "Pizza a ate Paul night yesterday". In terms of orthodox English grammar, this is a very badly structured sentence. One should conclude that grammar restrictions would prevent the readers from understanding it. However, the author imagines that most readers attributed to that sentence the same meaning they would have attributed to the sentence "Paul ate a pizza yesterday night". This is because the semantic and pragmatic information provided by the overall context (i.e. world spoken of: eating; time spoken of: the past, probably yesterday night; encyclopedic knowledge: pizza is a well-known Italian kind of food and Paul is probably the name of a person, who could like to eat pizza; etc.) is, quantity and quality-wise, enough in order to attribute to the former sentence such a meaning.

²⁸⁶ Allan correctly points out that the *a priori* drafting of a list of actual restrictions (of a grammatical, semantic and pragmatic nature) would entail the need to try every conceivable combination of listemes in every conceivable context, such a task being at best impracticable and at worst impossible (see K. Allan, *Natural Language Semantics* (Oxford: Blackwell Publishers, 2001), p. 256).

Second, in determining the utterance meaning, the hearers take into account the rules of grammar, in particular those of morphology and syntax, conventionally agreed upon within the community language and make the inferences that they are expected to draw, on the basis of the cooperative principles, from the semantic specifications of the lexemes used in the utterance and its overall context. These inferences generally takes the forms of implicatures, both conventional, i.e. determined by the conventional meaning of the lexemes used in the utterance, and conversational, i.e. pragmatic inferences based on the overall context.

In contrast, propositional calculus has a more limited relevance for the purpose of determining the utterance meaning, both because its scope is limited to truth-value analysis, i.e. the assessment of whether a sentence composed by propositions joined by logical connectives is true in the specific world and time spoken of, and because it heavily relies on implicatures and pragmatic analysis in order to determine the meaning of the clauses (the propositions) to which the propositional calculus must be applied.

4.4. *The special case of sentences that cover the future*

When an utterance is used in order to describe or cover the future, there is a supplementary factor, in addition to those illustrated in the previous sections, which may contribute to increasing its ambiguity and vagueness. In such a case, in fact, a discrepancy usually exists between the general intention of the speaker,²⁸⁷ on the one hand, and the situation described in his utterance, on the other. This discrepancy is difficult to avoid in many instances.

The key reason for such a discrepancy is that human thought generally works by means of prototypes, exactly as language does.

When a person wants to convey a certain message (for example, a rule of behavior to be applied in the future), which corresponds to his general intention, he instinctively thinks about the prototypical situation(s) to which his message is intended to refer and, consequently, he builds his utterance around that prototypical situation(s). However, this does not mean that the content of the message he wanted to convey was limited to the prototypical situation(s) he referred to in his utterance.

If a mother tells her 14-year-old daughter that she cannot go to her first high school party wearing a short skirt, this does not mean that she intended to allow her daughter to go there wearing mini-pants. The author assumes that the vast majority of parents would agree on this inference.

As discussed in section 3.3.2, prototype semantics has demonstrated the fundamental role played by prototypes in the choice of the listemes and expressions actually used by the speaker and stereotype semantics has even led to the conclusion that the intension of a specific listeme is based on the minimum set of stereotypical features that the typical

²⁸⁷ I.e. his vision of the future.

denotata of that listemes present.

By analogy, it may be asserted that prototypical situations commonly constitute the models around which the speaker instinctively constructs his utterances. The scope of the prototypical situations may more or less approximate the abstract scope of the general intention of the speaker. However, it is generally difficult (sometimes impossible) and time-consuming for the speaker to determine *a priori* the gap existing between the scope of the former and that of the latter, which makes the effort of anticipating all the possible relevant situations substantially unworkable.

Therefore, although it is viable for the speaker to more analyse his general intention in greater depth in order to find better prototypical situations thereof,²⁸⁸ in many instances seeking all prototypical situations whose aggregate scope matches exactly with the scope of the speaker's general intention proves to be in vain. The reason for such a difficulty lies in the fact that the very same speaker is unable to properly express his general intention and to anticipate all possible future instances, although, where put before an actual case, he would without doubt be capable of determining whether or not the specific item falls within the scope of his general intention. As St. Augustine acknowledged with reference to the concept of time, "Quid est ergo tempus? Si nemo ex me quaerat, scio; si quaerenti explicare velim, nescio".²⁸⁹

Moreover, the prototypical situations that come to mind and that are thus used by the speaker in his utterances vary greatly according to the overall context of those utterances, since they somewhat depend on the world (and time) spoken of, on the context of the utterances and on common ground.²⁹⁰ This may contribute to making even more difficult for the hearers to determine the general intention of the speaker, especially where significant differences exist between the encyclopedic knowledge of the hearers and that of the speaker at the moment of producing the utterance.

The phenomenon just described often determines a status of uncertainty whenever the speaker's task is that of formulating generally applicable commands and rules of behavior.²⁹¹ Thus, it characterizes and contributes to determining the ambiguity and vagueness of the law.²⁹²

²⁸⁸ Even a "general definition" may be seen as a prototype, with a very broad scope, of a general intention. A clear instance is the definition of resident person in art. 4(1) OECD MC, the latter being a very elaborated prototype of the general intention of the OECD in respect of the concept of "residence for treaty purposes". The existence of a discrepancy between the general intention and the prototype (Article 4(1) definition) is proved by the large amount of academic discussion and literature on what should fall within the scope of such a prototype (definition).

²⁸⁹ Augustinus, *Confessionum Libri Tredicim*, Liber Undecimus, c. 14 (see Augustinus, *Confessionum Libri Tredicim* (Citta Nuova Editrice) – available on-line at <http://www.augustinus.it/latino/confessionum/index.htm>). The excerpt may be translated as follows: "What is then time? If nobody asks me, I know; if I have to explain to somebody asking me, I don't".

²⁹⁰ In particular, they may vary depending on the encyclopedic knowledge shared by the speaker and the hearers.

²⁹¹ On the relation between "command" and "rule" and on the connected legal issues, H. L. A. Hart, *The Concept of Law* (London: Oxford University Press, 1961), Chapters I through III.

²⁹² See, with regard to the ontological vagueness of the rules of law, H. L. A. Hart, *The Concept of Law* (Oxford: Oxford University Press, 1994), pp. 124-135.

In fact, the persons drafting a certain law provision²⁹³ in most cases cannot properly anticipate all the situations they would be willing to regulate by means of that provision. In such instances, where a situation occurs that is seemingly outside the scope of that provision, the choice for the interpreters,²⁹⁴ from a general theory of law standpoint, is either (i) to consider that situation as non-regulated by that specific piece of law, which means that the situation at stake usually ends up being regulated by other provisions of law (including general principles of law, customs, *ex aequo et bono*) or (ii) to consider that situation as regulated by an extensive or analogical application of that provision. The latter solution may encounter the approval of the community, where it may be reasonably inferred that the situation falls within the scope of that provision as ascertainable from the analysis of the overall structure, content and purpose thereof.

Consider, in this respect, the following instance. The regulation of the new greenhouse of your city contains the following provision: “birds cannot be introduced in the greenhouse”. You are one of the persons working at the greenhouse and, being allowed by the regulation to propose new plants, insects and animals to be put therein, you propose five bats. Your supervisor, however, believes that the regulation does not allow bats to be put in the greenhouse and rejects your proposal. One might reasonably wonder whether the supervisor is right in this respect. On the one hand, the intension of the listeme “bird” does not seem to include bats; therefore, it might be argued that your proposal was not in breach of the applicable regulation. On the other hand, it could be inferred from the overall context of the relevant article of the regulation that the reference to birds should be intended as a reference to “all flying animals that, due to their size and potential speed, are capable to damage the air system plants attached to the ceiling of the greenhouse”. Whether it is reasonable to construe the relevant article in this manner is a matter that depends on the overall context, i.e. the whole content of the regulation, the type of air system plants actually installed, the shared encyclopedic knowledge of the drafters and the potential addressees of the regulation, etc. In any case, it does not seem *prima facie* absurd to assume that the lexeme “bird” has been employed in that provision because it denotes the prototype of the flying animals whose presence in the greenhouse the drafters intended to prohibit.

All in all, finding out the utterance meaning of any legal provision exactly consists in assessing what is its most reasonable meaning²⁹⁵ on the basis of the actual text thereof, the cooperative principles and all other elements of the overall context.

The result of such an inferential process is not determinable *a priori* and, as has already been noted in the previous section, it may vary according to the person carrying it out since, where items of evidence exist in favor of more than one construction of the relevant legal provision, as is often the case, such items may be weighted differently by

²⁹³ E.g. the legislator with reference to a statute, the contracting parties with reference to a contract, the contracting States with reference to a treaty, etc.

²⁹⁴ I.e. the “hearers” of the utterance.

²⁹⁵ I.e. either the one incorporating the above-proposed meaning of the lexeme “birds” (all flying animals that, due to their size and potential speed, are capable to damage the air system plants attached to the ceiling of the greenhouse) or any alternative reasonable meaning thereof.

different people for the purpose of determining the utterance meaning.

As a matter of fact, in most cases there will be a person competent to decide on this and other similar matters, who will settle the issue on the basis of “his” established meaning of the provision, as determined by discretionarily assessing the relative weights of the different items of evidence through an inductive inferential process.

