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Cognitive Invariants and Linguistic Variability: From Units to Utterance

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Introduction

The question of diversity in linguistic representations is generally dealt with in terms of the categorization of meaningful units in different languages.ⁱ The purpose of this paper is firstly to show that this question must be approached differently at the level of the isolated units (lexemes or grammatical morphemes) and at utterance level, and secondly to define some of the mechanisms which connect these two levels.

Languages show the greatest diversity in their meaningful units, not just because referential strategies (categorization and referential paths, see 1.1. below) are extremely variable, but also because there is a '*depth dimension*' (see 1.2.) to the meaning of individual terms which differs from one culture to another, and even from one speaker to another. In fact the mode of designation or the way in which access to reference is constructed by a linguistic unit ('referential path') varies notably from one language to another, even when categorization is identical, i.e. for the same referent. Moreover, the representation assigned to a word fits into a complex network of formal and semantic relationships with other terms and also into a web of associations with physico-cultural context ('word depth'). This network belongs to the semantics of the word. It is also very different across languages and even differs from one speaker to another.

In language activity, virtual units undergo certain operations whereby they are incorporated into utterances. The overall meaning of an utterance and the meaning of the units it contains are involved in an *ongoing process whereby meaning is constructed* throughout the duration of the speech act. This process works by the creation of relationships which enable different levels to interact. At the utterance level, the relationship between thought and language can be apprehended in terms of 'projection' and '*dimensional conversion*' (see 2.1. below). In speech activity, multidimensional thought has to undergo a linearization process by which it is projected onto the syntagmatic axis. This

process can be described as a dimensional conversion (and reduction) from the multidimensional space of thought onto the linear space of speech. In any natural language, the reduction of the dimensions of thought to the linearity of the utterance is made possible by a complex of relationships, between the units of meaning and the meaning of the utterance, and again, between the depth dimension of the words and the linearity of the utterance (see 2.3.). While language production is formally a sequence of units, the effect which their concatenation in the utterance has on *meaning is*, however, *non-linear* (see 3.).

The ongoing construction of meaning within the utterance places linguistic categories in the role of *tools* available at the outset of a uniquely instantiated process, and therefore loosens their relationship to the categories of thought. Languages thus make use of different tools, but do so within the framework of a common process of meaning construction, much of which has yet to be elucidated.

Variability of representations at the level of the meaningful units

It has long been clear that languages divide up the world in different ways through their vocabularies and grammatical categories.ⁱⁱ Thus the body, presumedly the most universal and immediate of realities, can for example be shown to be divided up into different referential units in different languages. Depending on the scale of reference,ⁱⁱⁱ French *jambe* designates either the entire member (below the hip) or only the part below the knee, while Wolof *tànk* in the wider sense means the part below the knee, and in the narrower sense, the foot. Likewise, French uses "fingers of the feet" for English *toes*, while German has "hand shoes" (*Handschuhe*) for gloves. But there is more to the matter than this; different languages can also construct different 'referential paths' to reach the same object.

Diversity of referential paths

The way of naming a given body part can vary, e.g., the terms for the fingers can take quite different referential paths: in French, the index finger is the "one that shows, points", while in ancient Greek, it is the "one that licks" (*likhanós*). Each of these units thus refers to the same object, but gains access to reference in different ways. This distinction between 'meaning' and 'reference', which has been common since Frege,^{iv} has been reformulated by several linguists in terms of 'referential path' (Corbin and Temple 1994: 9, also Langacker 1991a: 275 and 1991b: 5, 45). The diversity of referential paths accounts for both interlinguistic variation and some differences between synonyms within a given language.^v

There is an essential property of language involved here. Words are only the 'representatives' of representations (Culioli 1990: 22), and the way reference is accessed is always a construct. This construction takes place through a choice of certain properties of the object in order to designate it, hence the variability of referential path. Thus, in the case of names referring to fingers, Greek and French have chosen different functional properties of the index finger, and name

it according to what the most salient property is perceived to be. Thus in one case, this is its use for pointing, and in the other, its use for scraping. These choices of referential path are both motivated (the finger is named according to one of its properties) and arbitrary (only one property is chosen from among many possible ones). Lexical categorization here provides an example of how variation among languages can be neither stochastic nor strictly deterministic.

While the meaning of a word must not be confused with its reference, neither can its semantic content be reduced to its referential path. The *index* finger is not simply the "one that points". The referential path is nothing more than the 'typical property'^{vi} around which the semantic content of the term is organized, i.e., the means of gaining access to the various representations assigned to the word. The various semantic values of a lexical item can thus be described as a network of specific values, organized in family-type relationships around a common schematic value (Lakoff 1987: 105, 460; Langacker 1991a: 279-87). This schematic relationship among the various assigned representations is what optimizes the referential power of language, and in particular, what enables a single word to refer to more than one object. To take an example in French, the expression *un bleu* can designate a beginner, a new recruit, a work suit, a cheese, or a bruise,^{vii} all of which have, in different ways, the common property of 'being blue'. Polyreference is a correlate of linguistic motivation. *Bleu*, in each of its meanings, is however associated with different semantic fields, each with varying connotations.

Language diversity and word depth

Words call up representations which fit into a complex network of relationships. While most of these phenomena are well known, they do not seem to have been sufficiently modeled. This has led the author to refer elsewhere (Robert 1996: 169-76) to this network as a third dimension of language, called the 'depth dimension of language' (*l'épaisseur du langage*), as an addition to the syntagmatic and paradigmatic dimensions.^{viii}

In the first instance, this dimension contains the referential value(s) of a term (e.g., the different meanings of French *bleu*), which are culturally coded and make up part of every speaker's common knowledge, or the 'hyperlanguage' in Auroux's (1995: 28) terms. But word depth cannot be reduced to a term's referential values. It includes the various associations linking words to their physico-cultural context, e.g., the referential universes of the various sorts of *bleus*, and also variable connotations (the diverse connotations separating the terms *bleu* and *néophyte*, or *white* as the color of mourning in Chinese and marriage in French, and so forth), background 'scenarios' (e.g., the various types of market relationships underlying terms referring to trade^{ix} or, in the case of a *bleu* as a new recruit, the military context and the hierarchy of army, etc.).

Language in this way sets up not just a network of relationships which are internal to the meaning content of any given term (such as metonymy, metaphor, schematicity, and extension^x), but also relations among terms, which can be supported by either meaning (synonymy, antonymy, etc.) or form. Thus, French *pardon* contains *don* "gift" (with a set of Judeo-Christian religious associations),

while the corresponding Greek verb suggests shared knowledge (*syg-gignôskein* "pardon", lit. "know with"). Such morphological relationships (whether or not they represent true etymological derivations) produce resonance-like phenomena among the terms in a language: formal resemblance leads to semantic relationships among the notions, connotations, and values associated with each one. Thus, *Côtes du Nord* et *Côtes d'Armor* are the (former and present) names of a single French province, which are quite different in their semantic depth: one is associated with the north (cold, gray) and the other with Armor or Armorica (incorporating both Celtic legend and a formal resemblance between *Armor* and *Amor*).

The network of formal and semantic relationships among terms is made all the more complex by the fact that form and meaning do not change at identical rates. Thus, a French *plombier* ("plumber") is no longer a tradesman who repairs pipes made of *plomb* ("lead"); the depth dimension of the word (hence part of its meaning) has changed through its linkage to the history of the society in which it is used. Some linguistic relationships may nevertheless survive demotivation: the metonymy involved in using the word *plume* ("feather") in the sense of "pen" in French to denote a politician's speech writer is still active, even though writers no longer use feathers to write with. This complex and changing relationship between words and their meanings, between the history of form and the history of content, means that caution is always required in trying to capture cognitive representations through linguistic representations.

Thus words exhibit resonance properties, i.e. have the ability to respond, as if by resonance, to the material and cultural context as well as to other words. These resonance phenomena, due to notional associations, vary widely from one language to another, according to the context and the overall lexicon of each one. The depth dimension provides meaning content to words and, to continue the acoustic metaphor, creates a wide variety of 'harmonics' to the fundamental furnished by the semantic structure of the individual term. The depth dimension is a complex region where linguistic facts are associated both with other linguistic facts and with extralinguistic factors.

This is why word depth is not just language-specific but in the last analysis specific to each individual speaker, since individual experience also plays a part in building specific relationships among words. Thus the word *grandmother*, for example, is caught up in a web of variegated relationships, some of which are intersubjective, while others are strictly personal.^{xi} For this writer, *grand-mère* in French naturally calls up the domain and structure of kinship relations, but also ideas of *Little Red Riding-Hood*, a brand of jams (*Grand-Maman*), her own grandmother's blue eyes, her grandmother's sister who had a home on the Côte d'Azur, hence the Mediterranean, and so forth.

Clearly, this depth dimension is a functional property of human language. It plays a part both in the representational power of language and in the construction of the meaning of a term in utterances and in discourse.

From units to utterance: The dynamics of meaning

We have been hitherto concerned with virtual units which can be stored in memory with their potential values. But units never appear alone in language activity; they are always part of an utterance, where meaning is constructed through a dynamic process. The units therefore undergo certain operations as they are incorporated into an utterance. The various kinds of relationships which are established in the course of the speech production create a contextual linkage which constrains how the meaning of the individual unit is to be interpreted and fits it into the overall design of the meaning of the utterance.

Language and thought: Sequentiation and dimensional conversion

The communication of a thought content in linguistic form, whether successful or not, requires the progressive dissipation of an initial indeterminacy of the discursive space between speaker and hearer. Before I start speaking, the addressee does not know what I want to say or even, most of the time, what I want to talk about: we have, as common reference ground, only the material situation we share. In order to be expressed linguistically, the thought content has to be progressively built up through the act of speech. Linguistic communication therefore proceeds from a kind of empty common referential space between interlocutors to an increasingly specified referential space. Language activity means eliminating indeterminacy^{xii} in order to build up a referential space common to the participants. I have argued elsewhere (1996: 186-191) that this dissipation of indeterminacy takes place through a complex process which can be understood in terms of projection and dimensional reduction. In the speech act, the speaker has to project a *multidimensional* thought onto a *linear* axis and break it up into a sequence of discrete units. The physical properties of language (as sound produced over time) are such that verbal expression implies running thought through a specific code, which acts as a bottleneck. This projection of a multidimensional space onto a linear one takes the form of a dimensional conversion or reduction which is often a painful experience for the speaker, involving obliteration or deformation of the speaker's viewpoint: his words say less than he would like them to.

The greatest difficulty for linguistic analysis surely lies in the structural feature of language, which requires that words with individual meaning be used sequentially to build up the overall meaning of an utterance, but without allowing the meaning of the whole to be reduced to the sum of the meaning of its parts. Formally speaking, morphemes are units which are ordered sequentially to make up an utterance; but semantically, words are not units of thought which can be added together to yield the meaning of the utterance. The complex interaction between two levels of meaning (the meaning of the units and the meaning of the utterance)^{xiii} sets up a dynamic process which proceeds throughout the speech act. This non-additive manner of building up the meaning of the utterance is precisely what allows the dimensional reduction of thought to language (and the reverse operation of interpreting the speech of others). The reason why the construction of meaning is not additive is that firstly, words have their own

meanings and their own representational depth (the third dimension of language); and secondly, the utterance has structural features which shape meaning in non-linear ways.

Contextual linkage: The ongoing construction of meaning within the utterance

Using words in an utterance sets up a contextual linkage, creating in turn a frame of reference within which the potential semantic overload of the units (owing to their depth) and the initial indeterminacy of the utterance can be dealt with. This linkage *activates* one or another of the latent values for the given term and reduces its initial polysemy. Thus, in French *terme* can denote a word (as in *terme technique* "technical term") or a conclusion (as in *mettre un terme à* "put an end to"). It can also mean a mere temporal limit (*au terme de sa vie* "at the end of his life") or an outcome or qualitative limit (*une grossesse arrivée à terme* "a pregnancy come to term").

All contextual factors, whether lexical, syntactic, or pragmatic, play a part in building the meaning of a unit in the utterance. In the expression, *terme juridique* "legal term", for example, the connection between the meaning of the adjective and the meaning of the noun is responsible for assuring that *terme* is taken in the sense 'word'. In the plural, *les termes*, a fragmentation^{xiv} is implied which makes it a count noun. But since words denoting a quality cannot be fragmented (**les blancheurs* "whitenesses"), the use of the plural eliminates the qualitative interpretation of *terme*. Likewise, the verb *arriver* "arrive at, reach" in *arriver à son terme* "reach its end" is telic and implies a dynamic process heading towards an intended end, thereby immediately eliminating the sense 'word', even when the preceding semantic context has to do with speech (e.g., *son discours arrive à son terme* "his speech is coming to an end"). The prototypical value of any term is thus more likely to be found in context-free or utterance-initial position.^{xv} Linkage takes place continuously within the utterance, enabling a term to take two different values within a single sentence, as in the advertising slogan, *au lieu de prendre₁ votre voiture pour une remorque, prenez₂ une remorque pour votre voiture* "instead of taking your car for a trailer, take/get a trailer for/as a car". Word order and the objects assigned to the verb *prendre/prenez* "take" assure it will have the meaning "consider to be" in the first occurrence and "choose, buy" in the second.

This linkage with the context is what makes communication possible: the depth dimension of the words is not constantly present in full. But the context does more than just filter semantic values, it creates its own. In French, *gueule-de-loup fanée* "withered snapdragon", where the name of the flower is a compound literally meaning "wolf's mouth", the adjective retroactively converts the preceding expression from a genitive construction into a compound noun referring to a flower.

Ways of connecting depth and syntagmatic dimensions

As we have seen, concatenation draws a guiding thread through the depth dimension of language, creating a semantic 'isotopic'^{xvi} which orientates the meaning of any term towards an interpretation congruent with the semantic field established by what precedes it. Syntactic and semantic possibilities are restricted as the utterance proceeds, and the referential space becomes increasingly specific. This is why we often find ourselves able to anticipate the end of the utterance or to finish other people's sentences for them. The depth dimension of language nevertheless makes it possible to 'verbally hijack' the linearity of the utterance: the speaker can play on the different values of a polysemic term by setting up a set of concomitant isotopics. The activation of different isotopics in this way is the mainspring of most plays on words, much of poetry, and even the kind of explosive rhetoric so dear to politicians. A French deputy named André Santini, commenting on the falling opinion ratings of the prime minister, Alain Juppé, who had previously announced an intention to form a *gouvernement ramassé*, i.e., a "compact government" (with a smaller number of ministers) was quoted as sarcastically saying, *il voulait un gouvernement ramassé, il l'a* "he wanted a '*gouvernement ramassé*' ("compact government" / "government that has fallen flat"), well now he's got one!".

In this context a second meaning of *ramassé* is activated, namely the sense "fail, fall flat" assigned to the verb *se ramasser* in familiar speech, and referring here to the unfavorable polls. Two layers of meaning are thus formed within the utterance. Such layering is made possible by the twofold network of relationships among words: syntagmatic relations and relations in the depth dimension.

The effects of this dual articulation of a single expression which brings the depth dimension into play are all the more powerful when they appear at the end of the utterance and 'retroact' on all that has come before. The activation of the second value then spreads its connotations over the entire utterance, i.e. along the web of relationships established in the depth dimension of the words. This can be seen in the remark made by an important figure in the French Socialist party, Laurent Fabius, concerning the reappearance of the defeated presidential candidate, Lionel Jospin, who had let it be understood that he would withdraw for a time from the political spotlight: *en fait de traversée du désert, la traversée de Lionel Jospin a été celle d'un bac à sable* "more than spending time in the wilderness (lit. crossing a desert), Lionel Jospin has been spending time in a theme park (lit. crossing a sandbox)", i.e., "he could not keep away very long".

A semantic isotopic is set up by associating "desert" and "sand", and the utterance ostensibly compares the time required to "cross" them. But "sandbox" brings in an entire universe referring to children, and its connotations in the depth dimension are diffused throughout the rest of the utterance and retroactively associated with the politician. Here we see words used as time bombs to set off sudden associations of ideas.

The utterance: Formal sequencing and non-linear semantic effects

The utterance, then, has specific properties deriving from the connections between the semantic depth of words and its own sequential form.

The role of depth in semantic time bombs

Contextual linkage makes the information yet to come in a speech act more and more predictable,^{xvii} but never entirely so. The guiding thread can always be broken. Unexpected information introduced at the end of an utterance can in this way have a surprise effect: the informational impact is made all the stronger by its arrival at an unexpected place, given the accumulated specifications created by contextual linkage. The dual network joining words both syntagmatically and through the depth dimension means that an unexpected word can shape meaning in a non-linear way. We have thus seen how semantic time bombs at the end of an utterance can have a retroactive effect by diffusing their connotations throughout the whole utterance. But the use of an unexpected term can also set up a syntactic isotopic with non-linear effects.

This sort of reversal of the information curve is a mainspring of rhetoric, and also of advertising, as Grunig (1990: 115-45), from whom the following examples are taken, has shown. Many advertising slogans make their impact by allowing an unexpected term with a high informational value, owing to its improbability, to intrude into familiar expression. One example is the advertisement for "Dim" hosiery: *en avril ne te découvre pas d'un Dim*, based on an alliterative French proverb warning against the sudden return of cold weather in springtime, *en avril ne te découvre pas d'un fil* "in April, don't remove a stitch (of clothing)". A similar case is the advertisement for a brand of mineral water, *aide-toi et Contrex t'aidera* "help yourself and Contrex water will help you", suggesting the proverb *aide-toi et Dieu t'aidera* (lit. "help yourself and God will help you", the English equivalent being "God helps those who help themselves"), i.e., fortune smiles on the enterprising. The 'verbal hijacking' only works when the original proverb is there to back up the slogan. Language depth thus makes resonance effects possible, not just among words but among utterances as well. The insertion of a single term ("Dim" or "Contrex") in the utterance has non-linear effects insofar as it activates *two* utterances, the actual slogan and the backgrounded proverb, thereby creating layers of meaning with semantic interaction between the two utterances.

Intonation and other linguistic butterflies

Returning to the emblematic example of chaos theory, we may say that utterances are like the weather: the tiniest change can affect the balance of the whole system. Intonation is one of those linguistic butterflies which can change the semantic climate merely by a beat of their wings. Thus, depending on the intonation, a simple sentence like *he's coming* can be an assertion, an assurance,

a question, or an exclamation of surprise. A change of intonation affects the meaning of the entire utterance.

In more general terms, any phenomenon of *scope* acting within the utterance can be responsible for non-linear shaping of meaning. Thus, the syntactic scope of the adjective in our previous example of *une gueule-de-loup fanée* "a withered snapdragon", brings about the syntactic reorganization of the phrase, whence comes a major semantic readjustment. The scope of focus within the utterance is another factor with non-linear effects. A change in intonation, for example, can bring about a change of focus which has a radical effect on the meaning of the utterance. Thus a French sentence like *ne l'achetez pas par pitié* can have two completely opposite values, according to the scope of the negation with respect to the focus. One meaning would be "have pity and don't buy it". Another, however, would have the scope of the negative *ne...pas* extend beyond the verb *achetez* which it directly modifies, in which case the sense becomes "do not buy it for reasons of pity (but buy it just the same)". There are many such elements in language whose semantic effects extend beyond the syntactic head of their immediate construction.

Utterance-modifying units

The sequential organization of the utterance is crossed by a variety of transverse structures which are flattened out in the syntactic structure (Robert 1993, 1996: 88-101). The informational structure and the organization of the utterance into topic and comment^{xviii} are one of these. But the utterance has other modifiers on two different levels (Culioli 1978a, 1982) which account for as many types of structural organization within the utterance: the predicative level (where the predicative relationship is constructed) and the higher level of the speech act (where a predicative relationship is associated with a speaker and a set of time/place coordinates). The meaning of some morphemes is such that they bear on the whole predicative relationship in which they have a syntactic role. Thus, in French *Jean est admirable de travailler ainsi* "John is wonderful to work so (hard)", more idiomatically expressed as "it's wonderful of John to work so (hard)", the adjective *admirable* modifies the syntactic subject *Jean*, but it also expresses a judgment on the part of the agent of the speech act (i.e. the speaker or 'enunciator') concerning the predicative relationship <*Jean, travailler*> as a whole.

This category of 'enunciative' morphemes, whose meaning bears on the utterance as a whole so that they affect meaning in a non-linear way, includes both evaluative terms (Kerbrat-Orecchioni 1980) like the adjective *admirable* above and, more generally, the external modal markers which express the way in which the agent of the speech act (the 'enunciator') endorses the utterance, e.g., propositional modalities (affirmation, negation, question, command, wish, etc.), epistemic modalities, and evaluative modalities (Culioli 1978b).

The concomitant activation of more than one level of modifying relationships is made possible by the fact that the meaning of words can function on each level. The morpheme *I*, for example, is associated with both the level of the speech act (since it refers to the speaker) and to the syntactic level (since it

designates the subject of the predicative relationship). Likewise, some members of any other morphosyntactic class may have both a syntactic function which connects them to another component of the predicative relationship and a role in expressing modifications which emanate from the agent of the speech act and bear on the utterance as a whole, e.g., verbs or adverbs expressing an epistemic modality: *it seems he's forgotten*, *he's likely to come tomorrow*; or evaluative adverbs such as: *fortunately he's gone*.

The fact that meaning can be shaped in a non-linear way thus depends firstly on the complex articulation between the utterance and the depth dimension of words, and secondly, on the incorporation of terms into different levels of modification. The latter phenomenon is a consequence of the dimensional reduction to a linear axis imposed by the nature of language, so that all terms are required to enter into a sequential syntactic relationship, whatever the level at which the modifying relationship is established. Thus, in the course of the construction of the utterance, the insertion of any given element creates both semantic resonances and a reorganization of utterance structure which have non-linear effects on the meaning of the utterance as a whole.

Conclusion

Languages vary widely in the way they assign representations to their units. The categorization set up by linguistic units undoubtedly plays an important part in memory storage and cognitive access to referents.

In speech activity however, units are always incorporated into, and at the same time acted upon by a process of linearization of thought in an utterance. If we accept that the specific meaning of the units is built up in the course of the speech act, the problem of the relationship between thought and language (particularly the question of whether or not languages lock us into a way of representing reality) moves elsewhere: linguistic categories are only the tools available for the construction of a uniquely signifying utterance.^{xix} Looked at from the utterance level, language diversity thus parallels language-internal variation (polysemy, synonymy, paraphrase^{xx}). The nature of the process whereby meaning is constructed within the utterance implies that linguistic categorization must not be thought of as establishing set mental categories, but only as playing a part *at a specific level* in the construction of linguistic representations. Between language and thought, as between the utterance and its units, a process of construction intervenes with its concomitant adjustments, approximations, and occasional misfires.

Furthermore, the ongoing construction of meaning within the utterance is characterized by the non-linear shaping of meaning. This is the result of the constant retroaction of the units upon one other, thus assuming the existence of 'reentry-type' cognitive mechanisms in language activity, which will require further study.

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- i. I would like to thank Raymond Boyd and Steven Schaeffer for help in translating this paper.
 - ii. See for example Boas (1911) and Whorf (1940), who reach different conclusions.
 - iii. On variation of scale, see Langacker (1991a: 283).
 - iv. Frege ([1892] 1971: 103) discusses the fact that the two expressions "Morning Star" and "Evening Star", which both denote the planet Venus, have the same referent but different meaning.
 - v. Thus, as Corbin and Temple (1994: 10) have shown, French *électrophone* and *tourne-disque* have (or at least once had) the same referent, but differing referential paths. *Electrophone* describes how the sound is produced, whereas *tourne-disque* describes how the device works. Here, interlinguistic variation clearly parallels language-internal variation.
 - vi. This is Culioli's (1990: 129) 'schematic form'.
 - vii. For a detailed analysis of the differences between semantic and prereferential categories, see Corbin and Temple (1994), from whom this example is taken.
 - viii. Word depth cannot be reduced to the paradigmatic dimension: a paradigm defines the classes of words which can be substituted for one another in a given syntactic function, but neither the representational depth of a term nor the semantic relationships between the members of the paradigm (synonymy, antonymy, metonymy, connotative variation, etc.).
 - ix. See Fillmore (1982) on 'cognitive scenes' and 'semantic scenarios'; and Kerbrat-Orecchioni (1977) for a discussion of connotation.
 - x. See Lakoff (1987: 91-115) and Langacker (1991b: 2-5, 266-78) for discussions of the ways in which the values of a given term can be organized into networks.
 - xi. For this reason, the word depth is a third dimension but not a space such that it is homogeneously filled.
 - xii. This concept of Culioli (1982) can be related to Shannon's information theory.
 - xiii. This particular relationship between the whole and its parts is what distinguishes language from music.
 - xiv. This is what Culioli and others following him have called the discrete nature of count words (Culioli 1978c: 191; Franckel *et al.* 1988).
 - xv. Indeed, the depth dimension of words is criss-crossed by different poles of reference (or 'meaning attractors') which can attract interpretations. The prototype is only one of these.

Individuals also have personal meaning attractors: a linguist will tend to interpret the word *instrumental* out of context as a case name, while a musician will think first of his cello. What makes communication possible is that contextual reference points working as meaning attractors take priority over all others, although there may be interference at any time from other sources of attraction.

- xvi. The term is taken from Greimas (1966: 96), but has subsequently been redefined by various linguists. For a detailed analysis of the different kinds of isotopics, see Rastier (1987: 87-141).
- xvii. In particular, see Givón's (1988) attempt at modelling connecting sentence structure and informational predictability of content.
- xviii. The Prague school, in establishing a functional view of the sentence and its informational structure, foreshadowed the general theory of information (for a historical view, see Firbas 1974; also see Chafe 1994).
- xix. The various constraints imposed by individual languages at utterance level remain to be determined. Work undertaken by D. Slobin suggests there is an intermediate level of constraint between thought and utterance corresponding to what has been called 'dimensional conversion' above, and definable as 'thinking for speaking'. Distinctions involving aspect, voice, and noun modification, for example, constrain the speaker's linguistic representation of an event in different ways. But these distinctions "are not categories of thought in general but categories of thinking for speaking" (Slobin 1996: 91).
- xx. In particular, see Fuchs (1994).