Meaning construction, meaning interpretation and formal expression in the Lexical Constructional Model[1]

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1. Introduction

The Lexical Constructional Model or LCM is a comprehensive model of meaning construction through language in context. The reader may find two complementary descriptions of the model in Ruiz de Mendoza & Mairal (2008) and Mairal & Ruiz de Mendoza (2009). Some examples of work within different areas of the LCM are Jiménez & Pérez (2008) and Mairal & Ruiz de Mendoza (2008), for lexical representation, Peña (2009), Baicchi (2011) and Galera & Ruiz de Mendoza (2012), Ruiz de Mendoza & Gonzálvez (2011a), for argument structure issues, and Del Campo (2011), Ruiz de Mendoza & Gonzálvez (2011b) and Pérez & Ruiz de Mendoza (2011), for illocution. Critical overviews of the LCM are provided in Butler (2009, 2012).

The LCM makes use of descriptive and explanatory tools from other linguistic accounts. Among them, the following figure prominently: (i) functionalist approaches such as Functional Grammar (FG; Dik, 1997ab), Systemic Functional Grammar (SFG; Halliday & Matthiessen, 2004), and Role and Reference Grammar (RRG; Van Valin & LaPolla, 1997; Van Valin, 2005); (ii) cognitive linguistics (CL), especially the Lakoffian strand of Cognitive Semantics (Lakoff, 1987; Lakoff & Johnson, 1999) and Goldberg's Construction Grammar (CxG; Goldberg, 1995, 2006); (iii) Natural Semantic Metalanguage (NSM; Wierzbicka, 1996, 1999; Goddard and Wierzbicka, 1994, 2002) and Explanatory and Combinatorial Lexicology (ECL; Mel'cuk, 1989; Mel'cuk & Wanner, 1996). However, the LCM does not fully identify itself with any of these approaches or other postulates within the functionalist and cognitivist

camps. Thus, while it is willing to make use of analytical resources coming from these and other fields of linguistic enquiry (especially from cognitive and functional linguistics, pragmatics, discourse theory and the cognitive sciences in general), it only does so to the extent that such resources prove effective to account for meaning construction and interpretation and for the formal realization of conceptual structure.

Furthermore, the LCM has built its own set of tools for linguistic description and explanation. In the domain of description, four meaning construction layers or levels are distinguished: level 1 deals with basic predicate-argument relationships and the way they are put into different perspectives in terms of tense, aspect and modality; levels 2 and 3 respectively address non-illocutionary and illocutionary (constructional or implicational) structure; finally, level 4 is concerned with discourse structure. In the domain of linguistic explanation, the LCM specifies the conditions for the integration of level-internal and level-external structure plus the conditions for the activation of implicit conceptual structure.

At whatever level of description, the LCM contemplates the complementariness of inferential and non-inferential meaning construction processes. Inferential meaning construction is supported by the activity of *representational cognitive operations* (RCOs) on cognitive models or on meaning representations at any level of meaning construction. An RCO is a mental mechanism whose purpose is to derive a full semantic representation out of a linguistic expression (or of other symbolic device, such as a drawing) in order to make it fully meaningful in the context in which it is to be interpreted. RCOs work in isolation or in combination on cognitive models of different types thus giving rise to predictable kinds of meaning effect. They are thus different from other cognitive operations whose role is to store and retrieve memories and information, or to recognize and/or construe objects, events or situations. A detailed account of RCOs is found in Ruiz de Mendoza & Pérez (2003), Ruiz de Mendoza & Peña (2005), and Ruiz de Mendoza (2011). Non-inferential meaning construction is based on lexical-constructional integration at level 1 of the LCM and on the instantiation of constructional variables at levels 2, 3 and 4 with lower-level representations (see section 5.1).

Within this descriptive and explanatory context, the purpose of this chapter is to provide readers with a description of the constructional apparatus of the LCM and of the way in which it is put to use in conveying meaning through language. As we proceed in our account, we will make contrasts with other cognitivist and functionalist accounts of language where the notion of construction plays a relevant theoretical role, especially Goldberg's CxG (Goldberg, 1995, 2006) and Van Valin's (2005) RRG.

2. What is a construction in the LCM?

Essential to the LCM is the notion of construction, which, as is well known, has become central to CL over the past two decades on the basis of seminal work by Lakoff (1987) and Fillmore, Kay and O'Connor (1988), with elaborations by various cognitive linguists, more prominently Goldberg (1995, 2006), Croft (2001), and Bergen & Chang (2005). Fillmore's original approach, unlike the others, is not fully committed to the vision of language as part of more general cognitive abilities, which makes it only partly compatible with CL. Some developments of Fillmore's constructionism are found in Fillmore, Kay and O'Connor (1988), Fillmore and Atkins (2000), Kay and Fillmore (1999) and Fillmore, Kay, Michaelis and Sag (2004). Lakoff's proposals, which are fully in line with the central tenets of CL, especially the assumption that linguistic structure is grounded in bodily experience, have been taken up and developed by Goldberg (1995, 2002, 2006) and also by Bergen & Chang (2005). Originally, a construction was understood as a non-compositional form-meaning (or form-function) pairing where the meaning of the whole exceeded the sum of the meaning of the parts. Two clear cases are the *What's X Doing Y?* construction, analyzed by Fillmore & Kay (1999) and the caused-motion construction, studied in detail by Goldberg (1995). A compositional analysis of *What's X Doing Y?* would merely yield a question about what someone is doing. But in fact *What's X Doing Y?* sentences usually involve the idea that there is something wrong about whatever is being described. This is evident from the sentence: *What's the child doing in his room now?* Much the same can be said about the caused-motion construction, which involves setting an object in motion from a source through space to a destination. There are caused-motion verbal predicates in English such as *push*, *pull* and *kick* (e.g. *He pushed me into the room*; *The dentist pulled my tooth out easily*; *The boy kicked the ball into the net*). However, caused motion can be expressed without making use of predicates of this kind. A classical example of the construction is the sentence *The child sneezed the leaf off the window sill*. While it may be argued that the motion component can be derived compositionally from the preposition *off*, it is not clear how this preposition can combine compositionally with the verb *sneeze*, which is not a motion verb. Of course, we need to invoke world knowledge to solve the problem, but this strategy goes beyond what the compositional assembly of the parts can predict. In turn, the causal component is another issue. There is no way we can say that the verb *sneeze* is intrinsically causal (cf. *He's been sneezing the whole afternoon*), which is why it cannot derive the causal ingredient in *The child sneezed the leaf off the window sill* by simply looking into the semantic configuration of the verb. Because of this, CxG postulates that the causal ingredient is brought into

3

interpretation from the caused-motion construction, i.e. it does not arise from combining the meaning of the different parts of the sentence.

More recently (e.g. Langacker, 2005; Goldberg, 2006), cognitive linguists are beginning to recognize the constructional status of any form-meaning pairings provided that the association is frequent or at least somehow stable (e.g. *How are you?*). On the grounds of the original definition of construction, according to which constructional meaning exceeds compositional meaning, the use of the ditransitive verb *give* in the sentence *John gave his sister a nice birthday present* is not to be considered a matter of the ditransitive construction. By contrast, the ditransitive use of *fax*, as in the sentence *I faxed her the whole chapter*, would have to be postulated to import additional meaning from the ditransitive construction. The verb *fax* is a "send" verb involving the electronic transmission of information, but in *I faxed her the whole chapter* there is more than just conveying information: there is "possession" of the information by the receiver, which is also seen as the beneficiary. However, Bencini & Goldberg (2000: 642) explicitly claim that when *give* and verbs like *send*, *mail* and *hand* are used with the ditransitive construction, "the construction is fully redundant with the meaning of the verb". This new view of constructional meaning is consonant with Goldberg's (2006) later criterion that any stable form-meaning pairing can be a construction.

Other strands of CL have given rise to slightly different ways of understanding the notion of construction (see Gonzálvez & Butler, 2006, and Dirven & Ruiz de Mendoza, 2010, for updated overviews). For example, Croft's (2001) *Radical Construction Grammar* (RCG), which has a strong typological focus, argues for the need to postulate low-level constructions arising from verb classes and from verbal predicates. A complementary position is held by Boas (2003, 2008, 2011), who, in the case of the resultative construction, postulates the existence of form-meaning pairings for each sense of a verb, i.e. so-called mini-constructions. However, this position, which is heavily influenced by the treatment of lexical polysemy in Frame Semantics (Fillmore & Atkins, 2000), loses generalization power while leading to an over-proliferation of descriptive categories (cf. Luzondo, 2012). We will come back to this point below.

Of special interest is Langacker's Cognitive Grammar (CG) approach (cf. Langacker, 1987, 2000, 2008). For example, for Langacker (2000: 13) constructions are "conventional symbolic units" that pair phonological structure (rather than morphosyntactic realizations) with lower-level schematic configurations of semantic structure and proposes compositionality as a key factor in meaning construction (see also Langacker, 2003). There can be full, partial or no compositionality. An example of full compositionality can be the

symbolic assembly involved in the intransitive sentence *She usually weeps at funerals*, where we know that the protagonist is a female person that has the habit of weeping when she is at a funeral. However, contrast *She wept her soul away during the funeral.* There are some small problems for full compositionality to be postulated for this sentence. One is that weeping is an intransitive verb, so it cannot have an object. A second problem has to do with composing the meaning of *weep away*. It can be argued that *away* is a polysemous adverb one of whose meanings evokes the idea of 'completeness', so *weep away* would mean 'weep to the limit of her strength or ability'. However, this brings in one more problem, i.e. that of how to interpret *soul*, which could be a metonymy for a person's emotions and her inner strength. But it would not work in the same way to say *She wept her emotions away*. In other cases of metonymy, the substitution of the intended referent for the one given by the expression seems to be more felicitous: *The buses/the bus drivers are on strike*; *We need a new hand/worker on our farm*. These two examples of metonymy are not a problem for compositionality. It could be argued that *soul* combines with *weep away* in roughly the same way as *heart* combines with *break* in *She broke my heart*, where 'heart' stands for feelings. Since feelings cannot be physically broken but non-physically hurt, this situation calls for an analysis in terms of metaphor and metonymy in combination: the heart with its associated feelings is seen as an object that can be broken and breaking the speaker's heart is seen as hurting his feelings (cf. Ruiz de Mendoza & Díez, 2002). However, this solution cannot be carried over to the analysis of *weep away* in the sentence above for two reasons: one is that here there is real weeping while in 'break someone's heart' there is no real breaking; the other is that weeping is seen as the manner in which another unmentioned action is carried out (i.e. releasing emotional tension).

In view of this discussion, what all these problems boil down to is the need to deal with the sentence *She wept her soul away during the funeral* mostly in non-compositional terms. In order come up with the best possible explanation, we first need to consider the meaning implications of the sentence. The most relevant ones for our discussion are:

(i) The protagonist wept abundantly.

(ii) By weeping the protagonist released most, if not all, her emotional tension (i.e. there is a change of state).

(iii) The protagonist's weeping lasted at least from the beginning to the end of the funeral.

While implication (iii) can be derived compositionally from the combination of the "during" PP and the rest of the sentence, (i) and (ii) need a different explanation. So, our second step is

to see if these two meaning implications may arise from a meaning pattern associated to some formal expression mechanism. This is easy to do by finding other linguistic expressions where the configuration *V + O + away* captures a similar range of meaning implications (cf. Jackendoff, 1997). Some examples are: *He cried his heart/life away*, *He drank his mind/life/sorrows away*, *He slept/snored his stress/cares/headache/days/life away*, *He sang/danced//giggled his heart away*, *He chatted his time away*. Obviously, even this partial sample of realizations is enough to identify a productive pattern that preserves implications similar to those in (i) and (ii) above: there is an explicit action (e.g. crying, drinking, sleeping, singing, etc.) which takes place for a long time thus being instrumental for another resultative action or process to take place in its entirety (e.g. releasing tensions or emotions, alleviating sorrows, having leisure time in order to feel better). These implications act as constraints on the elements that can realize the verb and object formal parts of the pattern: not any verb and object are possible, but only verbs involving ways of releasing emotional tension and objects denoting the relevant emotion directly, metonymically or through other conceptual connections (e.g. frame structure; cf. Fillmore, 1982). Evidently, there is a non-compositional productive association between the formal configuration *V + O + away* and the 'manner of releasing emotional-tension' meaning described above, where the meaning characterization places constraints on the kind of elements that can realize each form item. Because of this nature, we can safely argue for the constructional status of such a form-meaning pairing.

This discussion brings us to the definition of the notion of construction. There are three crucial properties of constructions that we have highlighted so far: (i) a construction is a form-meaning pairing where form consists of a morphosyntactic arrangement of elements; (ii) the form-meaning pairing needs to be productive, i.e. it gives rise to a pattern whose formal part can be realized by predicates that obey the requirements of the meaning part of the pairing; (iii) the nature of the relationship between the form and the meaning part is bi-univocal: form cues for meaning and meaning is realized by form.

There is one more property of constructions that has not come up in our discussion as yet. As we mentioned above, in recent cognitive-linguistic accounts it is assumed that frequency is a valid criterion to assign constructional status to a form-meaning pairing. On the face of it, this criterion may look like a valid one, but it is faced with two problems. First, we may wonder how frequency is to be measured. According to Bybee (2006), this is simply an empirical question that will be solved with time, as more phenomena are identified and low, medium and high frequency ranges specified for them. However, one objection to Bybee's reaction to the problem is precisely that setting up upper and lower limits on each frequency range is in

itself an arbitrary decision. In fact, frequency will vary with the usefulness of a construction to convey meaning within certain contexts. The greater the amount of times that a given situation type occurs, the greater the likelihood of occurrence for constructions related to that context. Other variables that can affect the frequency of a construction are the social context, register, gender, and age. A construction can have very low frequency on the basis of situational and other contextual factors and still be recognizable by speakers as well formed and meaningful. Besides, what if a form-meaning pairing is produced only once by a communicatively competent native speaker and not only understood but also regarded as highly natural output by other equally competent native speakers within a community of speakers? Would that not be a construction? If such a form-meaning pairing could qualify as a construction, then we need a different criterion than frequency.

Within the LCM, we contend that frequency is a natural side-effect of a form-meaning pairing catching on within a community of speakers for a given communicative purpose within a given context. The LCM proposes replicability as a more realistic criterion to determine whether a form-meaning pairing can be regarded as a construction. A construction is replicable to the extent that it can be understood as meaningful and reproduced with minimum (i.e. immaterial) variation by other competent speakers of the same language to convey the same meaning implications within similar context types. Replicability is thus to be added to properties (i)-(iii) above. In sum, the LCM defines a construction as a form-meaning (or function) pairing where form affords access to meaning and meaning is realized by form to the extent that such processes have become entrenched in the speaker's mind and are generally recognized by competent speakers of the language in question to be stably associated or are at least potentially replicable by other competent speakers of the same language with immaterial variation in its form and meaning.

2. Mediated compositionality

Now, let us go back to compositionality. Langacker (1987, 2000) seems to be in favor of recognizing that some form-meaning pairings cannot be constructed on the basis of compositionality thus requiring a constructional treatment. But if an expression can be explained compositionally, it is not necessary to postulate an extra level of meaning description. A relatively similar position is held in Van Valin's (2005) RRG, which postulates the existence of *constructional schemas* (previously called *constructional templates* in Van Valin & LaPolla, 1997) in order to provide theoretical backup for those situations in which linguistic output does not arise from the valence of the verb and the general linguistic

realization principles postulated in RRG. Constructional schemas are the equivalent of constructions in cognitive-linguistic accounts, that is, they are theoretical postulates that capture the language-specific features of the actual manifestations of non-lexical form-meaning pairings, which is what in RRG are called constructions (Van Valin 2005: 132). The similarities are obvious at the constructional end: both Langacker and Van Valin favor the idea that meaning is constructed bottom-up rather than top-down, i.e. whenever meaning can be derived from lower-level representations it seems unnecessary to make use of higher-level constructs like those postulated in Goldberg's CxG. But this is where the similarities end, since RRG is much more explicit than Langacker's CG as to the role of constructional schemas in meaning interpretation and about how semantics and syntax are interrelated. Furthermore, constructional schemas in RRG include syntactic, morphological, semantic and pragmatic information that uniquely characterize the construction in question.

The LCM differs from CG in its rejection of compositionality as a non-mediated assembly of meaning representations. On the other hand, the LCM agrees with RRG and other functionalist accounts (e.g. Dik's FG) that lexical structure is projected into syntax. But the way in which this happens is different from what CG and RRG postulate. In fact, what the LCM offers is a new view of linguistically and inferentially guided compositionality. Take a very simple transitive sentence: *The blacksmith hammered the metal for hours*. In this case, RRG, FG, CG, and the original Goldbergian CxG would see no need to postulate a transitive construction since *hammer* is a transitive verb with two arguments: one has the role of agent (or actor) and another of patient (or undergoer). This is truly so. However, the need to postulate the existence of the transitive construction arises from cases of transitivization of inherently intransitive verbs. For example, the verb *walk* can be used transitively in *She walked me to the station* and *You need to walk your dog more often*. In the first sentence, *walk* is used with the meaning of 'go with' or 'accompany'. In the second, the same verb adds a causal ingredient to the idea of company. We can ask ourselves why transitivization is polysemous. One possible solution is to invoke world knowledge: people are not generally expected to compel other people to walk with them, while a pet dog has to be led. This solution, however, leaves unexplained why *walk* and other motion verbs can be transitivized, while others that could have a company and a causal reading cannot: *He ran me to the station*; *She strolled me to the front door*, but **He rambled me to the park*. This means that we need a more complex solution that takes into account relevant world knowledge associated to the logical structure of lexical predicates and the conditions for the integration of all this meaning

structure into the structure of the transitive construction. But before we do so, we need to understand what characterizes the transitive construction.

One simple of way of characterizing the transitive construction is to say that it is a relationship between two predicate arguments such that one of them is the object of the other's eventive experience. For the sake of illustration, think of the nature of the object in the sentence above, *The blacksmith hammered the metal*, which is an affected entity (or patient) that can undergo a change of state (it can change its shape), in comparison with the nature of other objects: *The cat killed the mouse*, where the affected object necessarily undergoes a change of state (i.e. the mouse dies); *The team climbed the mountain*, which has an actor (the team) but no patient, since 'mountain' is simply the object used to develop the action of climbing; *Ron really loves that girl*, which has no actor, but rather an experiencer of love, and the object is not an affected entity, but simply the entity that causes Ron to feel love and a target of Ron's love.

To some extent, the basic meaning structure of two-argument transitive characterizations is related to the consideration of Aktionsart distinctions in grammar. In this connection, RRG postulates that for every verbal predicate there is a logical structure description that captures the type of relationship that holds between verbal arguments. Thus, *hammer* is an active accomplishment, *kill* a causative accomplishment, *climb* an activity, and *love* a state (cf. Van Valin, 2005: 45):

hammer': do' (x, [**hammer'** (x, y)]) & BECOME **hammered'** (y) (active accomplishment)

kill': [**do'** (x, ø)] CAUSE [BECOME **[dead'** (y)](causative accomplishment)

climb': **do'** (x, [**climb'** (x, y)] (activity)

love': **love'** (x, y) (state)

However, these characterizations do not tell us what kind of object we have in the different cases of transitivity. Compare the use of *climb* in *The team climbed the mountain*, with *paint* in *Picasso painted the Guernica*. The Guernica is the result of the activity of painting, but the mountain does not result from the activity of climbing. Even the same predicate can have different logical structure characterizations. We can thus contrast the telic use of *paint* in the Picasso example above with its non-telic use in *He paints a lot*. In the former case *paint* is active accomplishment, whereas in the latter case this predicate denotes an activity.

The existence of different kinds of transitive use and logical structure associated with two-place verbal predicates not only points in the direction of a highly abstract notion of transitivity, as we have defended above, but also suggests that it is necessary to endow lexical-predicate meaning structure with world-knowledge components. Additionally, it draws a picture of how meaning is constructed that differs from the one given by projectionist, compositional and constructionist accounts. In the LCM, there is projection of enriched lexical meaning (i.e. lexical meaning that binds world knowledge meaning elements with event-structure meaning) through constructional meaning into syntax. That is, lexical meaning elements are combined with one another through the mediation of constructional meaning. As we will see later on, this process is a constrained one: some combinations are made possible while others are discarded on the grounds of a number of conditions that regulate the interaction between lexical and constructional meaning. This means, for example, that the meaning of *The blacksmith hammered the metal* is composed by incorporating the meaning and argument structure of *hammer* into the transitive construction, which requires two arguments, one that acts as the object or target of the other's eventive experience. The object in this case is the metal and the other argument is an actor within the eventive experience of hammering the metal.

In this view of mediated compositionality, meaning is not necessarily constructed either bottom-up or top-down, since in actual use speakers can combine the two strategies or opt for one or the other depending on personal styles or on their online reaction to specific communicative situations. By way of illustration, consider the different levels of meaning construction involved in *I would never ignore your advice, much less break your rules*. The context for this utterance is one where the speaker feels the hearer is upset because the speaker has broken the hearer's rules and disregarded his advice. The speaker's choice of the construction with "much less" is strategic for the speaker to alleviate the hearer's emotional distress by reassuringly placing himself in a submissive, fully compliant position. So, on pragmatic grounds, it is very likely that the construction *X Much Less Y*, which calls for a contrast between 'ignoring the hearer's advice' and 'breaking the hearer's rules', is the first choice made by the speaker; other constructional options, such as the choice of *I would never*, which enhances the idea of submissiveness, would come second, while the expression of the two contrasting propositions would take the third place. In the LCM, the overall illocutionary intention for this utterance is a matter inferred illocution within a given illocutionary scenario type (cf. Ruiz de Mendoza & Baicchi, 2007; Pérez & Ruiz de Mendoza, 2011). The configuration *X Much Less Y* is used two achieve the overall illocutionary purpose, but its X

and Y variables are constrained by some requirements: the situation described in X is not likely to happen and, in any event, it is less likely to occur than the situation depicted in Y. This means that X and Y need to be negative statements, which is another illocutionary category. The configuration *I Would Never VP* is an illocutionary construction that serves this purpose. The VP variable in this construction is realized by the first argument-structure level complex combining the verb "ignore" and its object. Another contrasting VP fills in the Y variable of the initial discourse construction. This is a fully top-down strategy in the construction of a meaningful message for the context specified above: the speaker starts from an overall illocutionary intention and goes down the descriptive levels of discourse and local illocutionary structure up to argument-structure combinations. However, other meaning construction strategies are possible. For example, the speaker might have opted for one where he or she quickly reacts to the rule-breaking accusation and then, on another step, denies the accusation on the basis of a different discourse strategy: *Break the rules? I would never do that! And I'd never ignore your advice either!* Here the speaker first shows astonishment by repeating the more serious hearer's accusation with a questioning tone, then proceeds to deny it and finally decides to address the less serious accusation too. There is no initial discourse choice but rather the piecemeal construction of the overall discourse structure of the message through the sequential addition of discourse stretches each of which is consistent with the preceding one.

Finally, the LCM view of mediated compositionality also allows for meaning to be incorporated into a representation (thus being combined with other meaning elements) on the basis of linguistically, i.e. lexically or constructionally, cued inferences (see Mairal & Ruiz de Mendoza, 2009: 181-184 for details). Lexis-based cueing occurs in the case of lexical presupposition or when the meaning of a lexical item is shifted or re-construed on the basis of inference-triggering mechanisms such as metaphor or metonymy. A presupposition is but an implicit assertion that is to be combined with what is explicitly said. For example, the verb *regret*, as used in *We all regretted Annie's misdemeanor*, presupposes that the speaker takes it as fact that Annie has committed a misdemeanor. Metaphor and metonymy can work at various levels of meaning construction (cf. Ruiz de Mendoza & Mairal, 2007, 2008; Ruiz de Mendoza, 2011; Ruiz de Mendoza & Pérez, 2011) including lexical structure. Lexical metonymy works by expanding or reducing the meaning structure focus of a lexical item in a way that is consistent with our knowledge of the world. For example, when we ask people to tie their shoes, we understand that they will tie their shoelaces rather than any other part of their shoes to another object. The focus of attention is thus reduced from the shoes to the

shoelaces. Conversely, the scope of attention can be expanded when we are cued to use part of a concept to access the whole. This is the case of the use of *shoes* to refer to a situation in which a person finds himself or herself, as in the sentence *If I were in your shoes, I wouldn't go into business with him*. Lexical metaphor, on the other hand, works by making us understand an item (or set of related conceptual items) as if it were another item (or set of items). For example, we can understand someone's cowardly behavior in terms of comparable behavior when a chicken, which is a weak animal, is frightened and runs away. Following this rationale, *You are a chicken!* does not simply mean 'You are a coward', but adds a number of extra meaning implications about the addressee's weakness, lack of self-confidence, and inability to rise up to challenging situations. It is this complex conceptual package, rather than just the idea of 'cowardice', that is brought into meaning composition.

Construction-based cueing takes place in a broader range of situations. First, since a construction is a form-meaning pairing, it follows that cueing can be directed to retrieve either formal or meaning elements. Formal structure retrieval happens in the case of ellipsis. Consider: [Would I ever] *break the rules?* and [Can you] *see what I mean?* In these two clauses the elided material, which is part of the formal pole of the construction, is obtained, together with its associated meaning, by finding compatible form elements that realize meaning that is consistent with the context of situation or with world-knowledge assumptions. Constructional meaning structure retrieval can happen in three ways:

(i) Constructional presupposition: *When did you stop beating your wife*? inserts the implicit assertion that the addressee used to beat his wife into an egressive phrasal aspect construction *X Stop Y*).

(ii) Saturation or completion of underdetermined linguistic expressions (cf. Recanati, 1989; Bach, 1994; Sperber & Wilson, 1995): *He just stopped* [singing], *We are all ready* [to go to the wedding], *She has just started* [reading]. These expressions can only make full sense if completed with information derived from the context.

(iii) Subsentential utterances (Carston, 2002, 2004), also called minor clauses (Halliday & Matthiessen, 2004). Some examples are: *Nice day*; *Morning!*; *A spider!* Minor clauses have no verb or predicator and are used to realize conversational functions that draw attention to the speaker's emotions or attitude to a certain state of affairs (e.g. exclaiming, calling, greeting). In meaning construction, the speaker-related overtones are added to the matter-of-fact description of a state of affairs on the basis of argument-structure representations.

The picture of mediated meaning composition that we have presented here places the LCM midway between projectionist and constructionist accounts of language. However, this does not mean that the LCM takes any theoretical weight off the role of constructions in linguistic description and explanation. In fact, constructions are given a highly prominent place in the LCM, since they are present at all levels of description as a possible meaning construction pathway alternating and/or being complemented with inferential activity. Thus, lexical structure is always projected through constructional structure at the level of argument structure representations. Then, the output of this process is built into implicational, illocutionary and discourse constructions. In the following sections, we will deal with the role of constructions in this complex process at the descriptive and explanatory levels of adequacy.

4. Descriptive tools

As part of its descriptive apparatus, the LCM features:

(i) A typology of cognitive models, which it divides up into low-level and high-level situational and non-situational cognitive models (cf. Ruiz de Mendoza, 2007). These models underlie not only the semantic base of lexical predicates and constructions but also language users' inferential ability, which is also an essential part of the dynamics of meaning construction. Furthermore, this typology determines the four descriptive levels of the LCM: the argument structure level or level 1; the implicational structure level or level 2; the illocutionary structure level or level 3; and the discourse structure level or level 4.

(ii) Predicate-structure and argument-structure constructional templates, initially inspired by analogous Aktionsart-based descriptive tools in RRG, but later developed into richer characterizations incorporating world knowledge through a combination of lexical primes and functions adapted from NSM and ECL.

(iii) Idiomatic configurations, which can range from having the nature of a lexical predicate (e.g. *kick the bucket* 'die') to that of a construction with variable elements (e.g. *Can You X, Please?*, used to make requests; or *X Let Alone Y*, used to contrast two unlikely situations or events where the second one is even less likely to take place than the first; cf. Fillmore, Kay & O'Connor 1988).

Sections 4.1, 4.2 and 4.3 discuss these descriptive constructs.

4.1. A typology of cognitive models

The LCM makes use of the notion of *idealized cognitive model* or ICM, first proposed by Lakoff (1987), and recognizes ICMs as the repository of world knowledge, which is crucial not only to create a coherent discourse flow, as has been emphasized by text linguists and discourse analysts ever since the inception of their work (e.g. Beaugrande & Dressler, 1981; Van Dijk & Kintsch, 1983; cf. Trappes-Lomax, 2004: 150), but also to account for all aspects of meaning construction, including mediated composition and cued inferencing. An ICM is an internally coherent conceptual structure arising from the way we construe the world of our experience. Lakoff (1987) distinguished four organizing principles that give rise to different kinds of ICM: (i) predicate-argument relationships of propositional structure, which is used to describe objects, states, situations, and events (Fillmore's FrameNet is an exhaustive attempt to deal with such structure; cf. Fillmore & Petruck, 2003); (ii) image-schematic or topological relationships, such as part-whole relations and force dynamic notions, as originally described by Johnson (1987) (cf. Peña, 2008, for discussion); (iii) metaphorical mappings, i.e. sets of correspondences across discrete conceptual domains where one of the domains, the source, allows us to reason about another domain, the target (e.g. *The little hamlets were all strung up along the valley*, where the source domain is the image-schematic structure arising from a set of objects threaded together into a string and the target domain the imaginary line formed by the hamlets) (cf. Ruiz de Mendoza & Pérez, 2011, for discussion); (iv) metonymic mappings or source-target relationships within a conceptual domain, where the source affords access to the target, with which it is conceptually related (e.g. *Two heads are better than one*, where the 'head' stands for a person's intellectual abilities; cf. Barnden, 2010; Ruiz de Mendoza, 2011, for discussion).

Lakoff's (1987) classification has been made by taking into account four basic structuring principles of ICMs. However, there are at least three other complementary taxonomic criteria: (i) the degree of genericity of an ICM; (ii) its situational or non-situational nature; and (iii) whether the concept is scalar or not. Figure 1 below supplies an exemplified summary of possibilities:

	Situational	Propositional	
		Non-scalar	**Scalar**
Primary-level	---	Shape, container, part-whole, path	Big, hot, fast, heavy, much, good, frequency, probability, angry

| Low-level | Going to a party, reading a magazine | Dog, picture, kill, die, run | --- |
| High-level | Begging, promising, thanking | Action, process, result, cause, consequence | --- |

Fig. 1. *A taxonomy of cognitive models*

At the primary level, we have knowledge constructs that arise directly from sensorimotor experience. Such constructs include but are not limited to image schemas, which the LCM defines as topological conceptual characterizations abstracted away from low-level conceptual structure arising from (i) the way we perceive objects by themselves and in their interaction with other objects, and (ii) from the way we interact with such objects on the basis of motor programs.

Low-level ICMs are non-topological knowledge constructs created on the basis of our experience with objects, situations, events and their properties and relations. Low-level cognitive models are schematizations of experience that can be enriched ad hoc as demanded by a number of cognitive tasks, such as recognition, memory retrieval, and various construal operations including those pertaining to language production and interpretation.

High-level ICMs are non-topological knowledge constructs created by deriving properties and relations common to low-level cognitive models. High-level cognitive models can be parametrized in application of the GENERIC FOR SPECIFIC metonymy.

Situational cognitive models or scenarios are conventional series of events (i.e. dynamic states of affairs) that are coherently related to one another. They are constructed on the basis of propositional cognitive models that combine to create more complex scenarios.

Non-situational cognitive models are those that capture information pertaining to entities, their properties and their relations in non-situational contexts.

Scalar cognitive models are primary cognitive models based on a system of ordered marks at fixed intervals that can be used as a reference standard in measurement. They arise from our experience with (i) physical entities and their (subjectively or objectively) measurable properties in such domains as size (*big, medium, small*), temperature (*hot, warm, tepid, cold*), speed (*fast, slow*), weight (*heavy, light*), quantity (*much, little, many, few*), quality (*good, bad*), and strength (*strong, weak*), (ii) events, such as frequency (*always, often, sometimes, never*) and probability (*certain, likely, unlikely, impossible*), (iii) the intensity of our emotional reactions to entities and events.

ICMs play a role at all descriptive levels in meaning construction. This means that, at any level of description, conceptual structure is exploited either inferentially or through lexical and constructional mechanisms. For example, at the argument-structure level, the Y part of the construction *X Be Ready Y*, where Y is either a *For-PP* or an infinitival clause, may need completion through cued inferencing: *The cult members were getting ready* can be completed with *for a new spiritual awakening/ to take part in a new spiritual awakening*. Evidently, the way the Y variable is realized has to be conceptually compatible with the information instantiating the X variable. The role of ICMs is also evident at the rest of the descriptive levels. Think of the origin of the conventional construction *Don't You X Me*, as in *Don't you daddy/honey/hello me!*, which is used when the speaker feels upset at the addressee's behavior, who uses familiar appellatives and related forms of address as if nothing were wrong. This construction, which works at the level of the implicational-structure of utterances, requires an underlying scenario (a low-level situational ICM) where people who have acted wrongly may behave in a casual way in order to pretend that they are unaware of any mistake they may have made. The same scenario can be exploited inferentially: *And you still call me honey/daddy!* At the illocutionary level, a request can be made on fully inferential grounds (e.g. *I have a terrible headache*) or through a conventionalized construction (e.g. *Could you give me an aspirin, please?*). In the two cases, there is an underlying high-level situational ICM that helps us make sense of the request: when people are in trouble or in need, other people are expected to help them. This is the reason why a statement of need can easily be interpreted as a request, but also the reason why a question about someone's ability to perform an action can be routinely used to make requests thus giving rise to an illocutionary construction such as *Could You X, Please?* (cf. Ruiz de Mendoza & Baicchi, 2007). Finally, at the level of discourse structure, think of the following attested sentence: *Gabriel washed the dishes while his father blew out the candles* (COCA, 2006). The construction *X While Y* sets up a partial or total temporal overlap connection between X and Y. In this example, temporal overlap will normally be conceived as partial since washing dishes usually takes longer than blowing out candles. Given the necessary contextual conditions, the discourse sequence *Gabriel washed the dishes*; *his father blew out the candles* can also be interpreted as being partially simultaneous by virtue of plausible inferences made on the same world-knowledge basis.

From this brief discussion of examples, it is evident that each descriptive level in the LCM is based on a different kind of world-knowledge structure that gives shape to the semantic pole of lexical and constructional characterizations:

-Level 1 lexical structure makes use of either primary or low-level non-situational ICMs.

-Level 1 argument-structure constructions make use of high-level non-situational ICMs.

-Level 2 implicational constructions are based on low-level situational ICMs.

-Level 3 illocutionary constructions

- Level 4 discourse constructions

As shown above, each of these ICM types can be used, within its level of description, to derive inferences.

4.2. Argument-structure lexical and constructional templates

In order to account for the eventive structure of lexical items that can act as predicators, the LCM makes use of the logical structure (LS) characterizations of verb classes postulated within RRG. These are listed and exemplified in Figure 2 below:

Verb Class	Logical Structure	Example	Instantiation of LS
State	**predicate'** (x) or (x,y)	*see*	**see'** (x,y)
Activity	**do'** (x, [**predicate'** (x) or (x,y)]	*run*	**do'** (x,[**run'** (x)])
Achievement	INGR **predicate'** (x) or (x,y), *or* INGR **do'** (x, [**predicate'** (x) or (x,y)]	*pop, burst into tears*	INGR **popped'** (x)
Semelfactive	SEML **predicate'** (x) or (x,y) SEML **do'** (x, [**predicate'** (x) or (x,y)]	*glimpse, cough*	SEML **see'** (x,y)
Accomplishment	BECOME **predicate'** (x) or (x,y), *or* BECOME **do'** (x, [**predicate'** (x) or (x,y)]	*receive*	BECOME **have'** (x,y)
Active accomplishment	**do'** (x, [**predicate₁'** (x, (y))] & BECOME **predicate₂'** (z,x) or (y)	*drink*	**do'** (x,[**drink'** (x,y)]) & INGR **consumed'** (y)

17

Causative accomplishment	α CAUSES ß where α, ß are LS of any type	*kill*	[**do'** (x, ∅)] CAUSE [BECOME [**dead'** (y)]

Fig. 2. *Aktionsart characterizations in RRG*

Each verb or its semantic and syntactic equivalent is described in terms of its logical structure. However, there is more than just this characterization. The LCM has incorporated into its descriptive apparatus an enriched version of the original notion of lexical template in RRG. Van Valin & La Polla (1997: 117) give the following template for speech act verbs:

do' (x, [**express**(α).**to**(β).**in.language**.(γ)' (x,y)])

This template, which simply captures the idea that speech act verbs are used to perform actions by expressing meaning in language, can be further specified when applied to a specific speech act verb, as is the case of *promise*, which is seen as a causative accomplishment (Van Valin & La Polla 1997: 551):

do' (x, [**express**(α).**to**(β).**in.language**.(γ)' (x,y)]) CAUSE [BECOME **obligated'** (x,w)]

This representation binds the logical (or Aktionsart) structure capturing the eventive nature of the lexical predicate in question (the speaker causes himself or herself to become obligated to a course of action) with the non-eventive idea that the predicate is used to convey meaning through language. However, the amount of conceptual material that is encoded into this representation is not sufficient to account for all the knowledge that is relevant in the case of 'promise': speakers making promises do more than just express self-imposed obligation; they are also able and willing to perform the action and they generally make promises in order to comply with the addressee's wishes or expectations in a reassuring way. This knowledge is necessary for linguistic interpretation: *I promise to cancel the card if I don't find it in a few days* strongly suggests that the hearer is worried about the card being misused by someone else if it has actually been lost rather than just misplaced. There is no way in which this (default) interpretation can be derived on the basis of Van Valin & La Polla's representation.

In order to solve problems like this, Mairal & Faber (2002, 2005, 2007) have proposed a system of capturing world knowledge through conceptual amalgams of lexical functions and conceptual primitives. Such amalgams can then be bound with logical structures like those put forward in RRG by correlating argument-structure variables (represented by Roman

alphabet letters such as x, y, z) with the variables associated to specific world knowledge structure amalgams (represented by numerals like 1, 2, 3). The following representation captures essential world-knowledge structure described before for the verb *promise*:

[MANNER$_1$ reassuring & LOC$_{TEMP \rightarrow}$FACT$_3$ & PURP$_1$ BECOME **know'** (3, 2)] [**do'** (x, [ø] CAUSE [BECOME **obligated'** (x, z)] x=1, y = 2, z = 3

A lexical function (e.g. MANNER, PURP) is an operator over lexical content, which can be broken down into amalgams of conceptual primitives and event-structure characterizations. Lexical functions can also combine, as in LOC$_{TEMP \rightarrow}$FACT above. Lexical functions have been adapted from Mel'cuk's *Explanatory and Combinatorial Lexicology* (ECL) (cf. Mel'cuk, 1989; Mel'cuk & Wanner, 1996), while conceptual primitives have been drawn from Wierzbicka's *Natural Semantic Metalanguage* because of its solid typological grounding (cf. Wierzbicka, 1999; Goddard and Wierzbicka, 1994, 2002).

One of the areas of emphasis of the LCM is on grouping lexical items into lexical classes with the view of systematizing lexical description (cf. Faber & Mairal, 1999). Consider the way in which this is done by looking into the conceptual structure of verbs meaning 'do something badly' such as the following:

spoil': **do'** (x, ø) CAUSE BECOME **bad'** (y)

botch': <infml> **do'** (x, ø) CAUSE BECOME **bad'** (y)

bungle': [MANNER$_1$ do_bad] **do'** (x, [**do'** (x,y)]) & INGR**done'** (y) x = 1, y =2

flub': <infml> [MANNER$_1$ do_bad] **do'** (x, [**do'** (x,y)]) & INGR**done'** (y) x = 1, y =2

The parameter of informality and the manner specification (a lexical function) are crucial to produce the correct representations. *Botch* and *flub* are informal ways of conveying the same meaning as *spoil* and *bungle*. In turn, the notion of ineptness associated with the manner of performing the action in the verbs *bungle* and *flub* is captured by the combination of primitives 'do_bad'.

Now we come to argument-structure constructional templates. We will devote this part of the present section to the meaning pole of constructions, while section 6 later on will outline the question of formal expression. The first aspect of constructions to note is that their semantic configuration makes use of the same descriptive metalanguage as lexical templates. This is a reasonable consequence of the fact that the semantic pole of argument-structure constructions

derives from generalizations over low-level non-situational structure. The result of such generalizations is the creation of high-level propositional (or non-situational) cognitive models. This may be seen from a brief overview of the so-called manipulative subjective-transitive construction (e.g. *I want you in my office now*), which is a member of the subjective-transitive family (Gonzálvez, 2008). Other members of this family are: (i) the evaluative subjective-transitive construction (*I find their research very interesting*); (ii) the declarative subjective-transitive construction (*They call me arrogant*); (iii) the generic subjective-transitive (*I like my meat rare*). These are sister constructions within their class, so their general arrangement is parallel to the one we have for lexical classes, as we have exemplified above. Each construction is characterized by a number of features that are essential to determine the structure of its corresponding template. The manipulative subjective-transitive construction has the following properties:

-The first participant (which is realized as the syntactic subject) is prototypically human or it can be metonymically interpreted as such: *The BBC wants the audience happy*.
-The constructional element acting as a predicative complement of the object must be characterizing but not identifying: *I want you happy/*Marilyn Monroe*.
-The predicative complement must express the speaker's assessment: *I want you happy/*tall*.
-The event denoted by the predicative complement must be sensitive to either direct or indirect manipulation by the speaker: *I want you out of my house / *tall.*

The following constructional template, which is paraphrased right below for convenience, captures the characteristics that we have just listed:

[INSTR1authority & INVOLV1think LOC$_{\text{TEMP}\rightarrow}$PROP2subjective & 1 = *human*] **do'** (x, **[say'(x, y)])** CAUSE BECOME **be'** (y, [**pred-att**']); x = 1, y = 2

'The first participant, *x*, which is human (1 = *human*) expresses to another participant *y* a future property or state (**be'** (y, [**pred'**])), whose nature is determined by his position of authority (INSTR1 authority), which involves that the first participant regards such a property or state as necessarily subjective (PROP2 *subjective*)'.

Consider now, by way of contrast, the features and representation of the declarative subjective-transitive construction:

-The first participant (which is realized as the syntactic subject) is prototypically human or it can be metonymically interpreted as such: *The BBC considers this proposal viable.*

- The constructional element acting as a predicative complement of the object must be characterizing but not identifying: *He considers her a nice person/ * the woman sitting over there.*

- The predicative complement must express the speaker's assessment: *I consider her beautiful/ *in room 6.*

Evidently, it differs from its sister manipulative construction in the lack of the manipulative ingredient. The rest of the properties coincide. Below is the template for the semantic pole of this construction, together with its paraphrase:

[INVOLV1thinkPROP2subjective & 1 = *human*] do' (x, (x,[**say'**(x, y)]) & be'(y, [**pred-att'**]); x = 1, y = 2

'The first participant, which is human, says something, (*y*), which describes a property or state (**be'** (y, [**pred'**])); this involves that the first participant regards such a property or state as necessarily subjective (PROP2 *subjective*)

Two constructions that have been discussed extensively in the literature are the resultative and the caused-motion constructions (see Ruiz de Mendoza & Luzondo, 2012; Jiménez & Luzondo, 2012). Goldberg (1995) gives a very simplified meaning representation for both: X CAUSES Y TO BECOME Z (e.g. *The blacksmith hammered the metal flat*) and X CAUSES Y TO MOVE Z (e.g. *She sneezed the napkin off the table*). However, the two constructions have a number of variants that point to a greater degree of delicacy in their meaning representation, so regularities (similarities and differences) can be captured adequately (see, for example, Goldberg & Jackendoff, 2004, and Jiménez & Luzondo, 2012, for details on the complexities of the various resultative constructions). For example, *She cried herself hoarse* differs from *She wiped the table clean* in the degree of conscious involvement of the first participant in the result of the action, which is greater for the latter than for the former sentence. There is a lexical function, INVOLV, which is used to express situations in which

the state of affairs designated by a predicate involves the bringing about of another state of affairs that depends on the former. This lexical function can be optionally combined with the lexical function MAGN, which denotes intensification. This optional combination can be built into the following representation for resultative constructions:

[(MAGN) INVOLV1MEANSe1][**do'**(x,∅)] CAUSE [BECOME **pred'**(y)], x = 1
'The first participant acts in such a way that the first participant causes a new state to come about'

This representation shares part of its eventive structure with the caused-motion construction, which is evident from the following template:

[INVOLV1MEANSe1] [[**do'** (x, ∅)]] CAUSE [(PROC+) [**move'** (y)] & INGR <<NOT>> **be-LOC** (z, y)], x =1
'The first participant acts in such a way that the first participant causes an entity to move to a new location'

The reader will by now be aware that the difference between argument-structure constructions and lexical-predicate descriptions is merely a matter of the greater degree of genericity of the former over the latter. What this means is that lexical structure is constructional, which is why it is ready to combine with non-lexical argument-structure characterizations to the extent that there is conceptual compatibility. The problem for the analyst is to determine the conditions for such compatibility. There are two sources of difficulty: one is the fact that lexical and constructional structure, as evident from the description of lexical and constructional templates, is complex, i.e. it binds conceptual-primitive amalgams modified by lexical functions with event structure specifications; the other is that conceptual compatibility can be overridden through event re-construal processes thus giving rise to a rich array of lexical-constructional integration possibilities. Section 5 addresses these issues in some more detail. We now turn our attention to idiomatic constructions.

4.3. Idiomatic constructions

Argument-structure constructions, like lexical-predicate configurations, are the building blocks of meaning construction. For this reason, they are basic to language production and

interpretation. Sometimes, specific combinations of lexical and constructional structure of this kind become fixed through frequent repetition. This happens when the mediated meaning composition process is partially based on cued inferencing and the resulting inferences become stably associated with the overall combination. This is the origin of idiomatic constructions. These are fixed form-meaning pairings that range from predicate-argument configurations (e.g. *kick the bucket* 'die') to full clauses (e.g. *An apple a day keeps the doctor away*, used to advice people to eat healthy). The LCM classifies idiomatic constructions along two axes: (i) their degree of fixity, i.e. whether they are fully fixed or they contain some variable elements; (ii) their meaning function, which is essential to determine the level of description that they belong.

The first dimension allows us to differentiate between proverbs (or sayings) and the rest of idiomatic expressions. Proverbs are fully fixed idiomatic constructions that have a clear interpersonal function. For example, at the implicational level, they can be used to call attention to some aspect of a situation (*First come, first served*) or of human behavior (e.g. *A burnt child dreads fire*) or, at the illocutionary level, they can act as directive acts such as requesting (e.g. *Charity begins at home*), warning (e.g. *A great talker is a great liar*) or advising (e.g. *All that glitters is not gold*).

The second dimension is useful to distinguish implicational, illocutionary and discourse structure constructions, as briefly described in section 4.1, to which we add predicational-structure idiomatic constructions. We give some examples below:

> -Predicational-structure constructions: these are the functional equivalent of lexical predicates; e.g. *X kick the bucket (Y)* 'die', *X pushing up the daisies (Y)* 'dead', *X spick and span (Y)* 'completely new, unused, flawless'.
>
> -Implicational structure constructions: *What's X Doing Y?* (e.g. *What's the child doing here now?*; cf. Kay & Fillmore, 1999), which suggests that the situation the speaker is asking about is wrong; *Don't You X me!* (e.g. *Don't you 'honey' me!*), used to indicate annoyance at the addressee's unawareness that he or she has done something wrong; *Who's Been VP Y?* (e.g. *Who's been messing up the bulletin board?*), which conveys the meaning implication that someone has done something that irritates the speaker.
>
> -Illocutionary structure constructions: *You Shall Have X* (e.g. *You shall have a bicycle*), which is used to make promises; *Would You Mind If I X?*, which can be used to ask form permission (e.g. *Would you mind if I sat next to you?*); *I Won't X* (e.g. *I won't give up!*), which generally involves a refusal.

-Discourse structure constructions: *X Let Alone Y* (Fillmore, Kay & O'Connor 1988) (e.g. *I won't eat that garbage, let alone pay for it*), which, as discussed above, is used to refer to two unlikely states of affairs where the second one is even less likely to be the case than the first; *Just Because X Doesn't Mean Y* (e.g. *Just because we don't talk doesn't mean I don't think about you*; cf. Bender & Kathol, 2001) sets up and evidence-conclusion relationship according to which Y does not necessarily follow from X. More discourse constructions are discussed in Mairal & Ruiz de Mendoza (2009) in connection to general semantic relations.

These constructions are made up of fixed and variable elements in different degrees of fixity and variability. The fixed elements impose formal and meaning constraints on the variable elements. We will give an example of how this takes place. Consider again the implicational construction *Who's Been VP Y?*, as exemplified by the sentence *Who's been messing up the bulletin board?* As we have already noted, this construction conveys the meaning implication that there is a situation that bothers or irritates the speaker. The situation results from some previous event that is described in the VP Y variable part. In the example given above, someone has left the bulletin board in a disordered condition, which is the consequence of someone inefficiently handling the notices on it. The VP component is necessarily a progressive form in order to complete the past perfect form of the fixed part, thus indicating that the action has taken place in the recent past and is of consequence to the present moment.

4.4. Summary

The overview of the descriptive levels of the LCM that has been given in the preceding subsections is summarized in figure 3, for convenience.

Descriptive level	Cognitive model type	Conventional meaning construction mechanisms	Examples	Cued inferencing meaning construction mechanisms	Examples
Level 1: argument structure	Primary/low-level non-situational models	Lexical templates	Kill (x, y) walk (x)	Saturation or completion of underspecified representations after lexical-constructional fusion	*Coming!* (I'm coming) *I'm ready* (I'm ready to go to the party) *BBC World Service* (This
	Low-level non-situational models	Idiomatic templates	Kick the bucket (x') X through (z)		

	High-level non-situational models	Argument structure constructional templates	X causes Y to move Z X causes Y to become Z X does Y to Z		is the BBC World Service)
Level 2: implicational structure	Low-level situational models	Implicational constructions	Wh-'s been V-ing Y? *Who's been sleeping in my bed?* (Someone has been sleeping in my bed, which bothers me)	Metonymic access to low-level situational cognitive models)	A: *Does your tooth still bother you?* B: *Finally, my wife called the dentist* (My wife called the dentist to make an appointment for me and I had my tooth fixed)
Level 3: illocutionary structure	High-level situational models	Illocutionary constructions	I won't X! (refusal) (*I won't do that!*)	Metonymic access to high-level situational cognitive models	*I have a terrible headache* (= Give me some ibuprofen)
Level 4: discourse structure	High-level non-situational models	Discourse constructions	X Let Alone Y (*I won't eat that garbage, let alone pay for it!*)	Logical connections (e.g. cause-effect, evidence-conclusion); temporal relations (e.g. precedence, simultaneity); conceptual relations (e.g. similarity, contrast, conditioning, concession)	*The bomb went off and three people were killed* (cause-effect/ precedence)

Fig. 3. *The descriptive level in the LCM*

5. Explanatory tools

At the explanatory level, the LCM postulates two basic meaning construction processes: one of them, *cued inferencing* or *cueing*, consists in the activation of implicit conceptual structure

through some inferential mechanism on the basis of textual and contextual cues; the other is the *integration* of conceptual structure.

Cueing does not directly involve lexical or constructional structure, but the selective activation of conceptual structure organized in terms of an ICM type, as described in section 4.1. The intricacies of cueing, together with the principles that constrain its activity, go beyond the scope of the present paper. The interested reader may find a thorough account in Ruiz de Mendoza (2011). Here we will give one example of how cueing is constrained. For the sake of simplicity, consider an implicature-derivation task based on a hunting scenario, i.e. a low-level situational model specifying the typical characters, setting and sequences of actions arising from the activity of pursuing and usually killing game for food or sport. Imagine a friend of the speaker's, Jim, has gone hunting with some friends. After the hunting event, the speaker comments *Jim is a great shot* with the intention of conveying the idea that the hunt was very successful. This kind of implication can be obtained on the basis of a chained premise-conclusion analysis:

Premise (implicit assumption): A great shot is likely to hit all his targets while hunting.
Explicit assumption: Jim is a great shot.
Conclusion (implicated assumption): Jim probably hit all his targets.

Premise (implicit assumption): Hitting all targets makes a hunt successful.
Previous implicated assumption: Jim probably hit all his targets.
Conclusion (implicated assumption): The hunt was successful.

The two chained reasoning schemas, from the perspective of cognitive operations, are grounded in metonymy. Through metonymic expansion, the idea that Jim has great skills as a hunter gives access to a more complex hunting scenario where Jim uses his skills to actually hit all his targets. This first metonymy is a case of ABILITY FOR ACTION. In turn, this richer action scenario, through metonymic reduction, provides access to its most relevant subdomain in the context of the question about the success of the hunt: the assessment about how successful it was. This second metonymy, which is chained to the first, can be labeled ACTION FOR RESULT. There is an underlying principle, called the Correlation Principle, which, in its application to metonymy, leads speakers to select the most relevant source domain in terms of its potential to afford access to the intended target domain. The implicit premises in the two

reasoning schemas are constructed on the basis of this principle, which makes them adequate source domains for their metonymic targets, which are the implicated conclusions.

Conceptual integration can take three forms: (i) *subsumption*, which consists in building lexical-predicate structure into argument structure constructions (e.g. *laugh* can be subsumed into the intransitive construction in *He laughs a lot*, but also into the caused-motion construction, as in *The child was laughed out of the school yard*; cf. Ruiz de Mendoza & Mairal, 2008); (ii) *amalgamation*, which is a matter of combining either lexical-predicate structure or constructional structure belonging to the same descriptive level (e.g. the active and passive realizations of the transitive, resultative and caused-motion constructions; Ruiz de Mendoza & Gonzálvez, 2011); (iii) *saturation*, which realizes variables from either idiomatic or non-idiomatic constructional characterizations through lower-level representations (e.g. *Can You X, Please?* realizes X with a predication arising from the argument-structure level).

5.1. Constraints of subsumption

Subsumption has been described in great detail in Ruiz de Mendoza & Mairal (2008, 2011) and Mairal & Ruiz de Mendoza (2009). These papers spell out the main constraining factors on subsumption, which have been applied to a number of lexical classes and constructions in Pérez & Peña (2009), Peña (2009), Baicchi (2011), and Galera & Ruiz de Mendoza (2012). In this work, constraints on subsumption have been divided into *internal* and *external*. The former work on the basis of the compatibility between the conceptual characterizations of lexical predicates and argument-structure constructions. The latter are based on how lexical structure can be re-construed to make it fit into a non-lexical construction. Internal constraints can be further subdivided into two types: (i) constructional constraints on lexical structure; (ii) lexical constraints on the instantiation of constructional variables. We now discuss the different types of constraint.

There is widespread consensus among constructionists (cf. Michaelis, 2003; Goldberg, 2006) that constructional structure "coerces" lexical structure when there are discrepancies between the two. This phenomenon has been labeled *coercion* and it is regulated by the *Override Principle*, according to which the meaning of a lexical item is adapted to the meaning of the structure in which it is embedded. LCM proponents have argued (cf. Ruiz de Mendoza & Mairal, 2008: 378) that this principle is not specific enough to account for *how* coercion takes place.

In the LCM coercion is accounted for as a side effect of different kinds of construal of ICMs taking place at high levels of cognitive activity. To give some illustration, consider the

sentence *The students all but giggled him out of the room*[2]. The verb *giggle* is not causative, which means that its causative use in this sentence comes from somewhere else. In constructionist accounts, the assumption is that the caused-motion construction adds that meaning ingredient to the verb, which is thus adapted into this constructional requirement. However, not any verb can be coerced in this way into the caused-motion construction. For example *owe*, *kill*, *die*, *eat*, *sleep*, and *split*, among many others, would not fit into the caused-motion construction. The reason why *giggle* above, and other verbs like *stare* (*She stared me out of the hallway*), *smile* (*She smiled him out of sight*), and *chase* (*The gang chased him out of the country*) can occur in this construction is to be found in the possibility of construing the basic scenario invoked by the verb as one where self-instigated motion of the target of the action can take place or not. The caused-motion construction requires physical impact that sets an object into motion. When self-instigated motion happens, this is not the result of physical impact, but simply of psychological or emotional "impact", i.e. the target of the action feels affected psychologically or emotionally and reacts accordingly by moving to a different location. This re-construal of the basic scenarios provided by verbs like *stare*, *smile* and *chase* is metaphorical: we treat the psychologically affected target of a non-physical action *as if* it were the physically affected object of a physical action.

Another way of "coercing" lexical structure into a construction is supplied by metonymy (Ruiz de Mendoza & Mairal, 2007). Think of the inchoative construction: *The flask opened with a little 'pop'*[3]. In this example, it is evident that either there is a human agent or a non-human force that causes the flask to open. However, the scenario is presented as if the opening action were non-causal, i.e. it happened by itself. The scenario depicted by the linguistic expression thus stands for (i.e. is metonymic for) the actual scenario where there are human or natural causes behind the flask opening. The verb *open*, which is causal and transitive, can be used non-causally and intransitively through this re-construal of the opening scenario where some elements are given prominence (the 'become opened' part of the Aktionsart description of *open*) and others are backgrounded (the agent and instrument of the action).

Both metaphor and metonymy allow us to reinterpret a scenario in such a way that the lexical-predicate invoking it can be adapted into a construction whose event structure only shares with it partial structure. Metaphor and metonymy thus act as *licensing factors* on lexical-constructional subsumption.

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[2] books.google.es/books?isbn=1257900315; accessed on August 27, 2012.
[3] http://www.fictionalley.org/authors/elais/NTHG01a.html; accessed on August 27, 2012.

Internal constraints, by contrast, are not based on construal; they act as *blocking factors*. There are vertical and horizontal internal constraints. The former kind regulates the way in which lexical structure is built into constructional structure on the basis of (high and low-level) conceptual compatibility. The latter kind deals with the combinatorial properties of lexical predicates; such properties determine the ability of constructional elements to be co-instantiated. Let us discuss some cases of both internal constraint types.

5.1.1. Vertical constraints

Lexical structure consists of low-level and high-level (i.e. event or logical structure) non-situational specifications. Low-level structure is encyclopedic and is connected coherently in terms of networks of relations. For example, we know that a cat chases mice, that it has whiskers and a tail, that it purrs, and so on. Because of this, in default contexts, it is odd to say that a cat can become involved in actions that are implausible for cats: #*My cat chased your elephant*; #*Your cat drives better than mine*; #*When will our cat stop braying?* Since oddities of this kind arise from the nature of the lexical structure that is associated with the internal (or world knowledge) variables of a lexical template, we call this the *Internal Variable Compatibility* constraint.

High-level non-situational structure constitutes the logical structure of lexical templates. It is connected coherently on the basis of so-called inheritance relations. Such relations have been the object of systematic study in lexematic accounts of language in terms of lexical classes (cf. Faber & Mairal, 1999). To give one straightforward example, think of the (high-level) notion of 'change of state'. In English verbs denoting changes of state share the constructional property of being subsumable into the inchoative construction: *The mirror broke into tiny little pieces*, *The bubble has just burst*, *The meeting has not started yet*. The verbs *destroy* and *demolish* share part of their low-level semantic structure with the verb *break* (i.e. they involve reducing an object to fragments) but they do not share their high-level structure, since *destroy* and *demolish* are verbs indicating 'cessation of existence'. For this reason, they cannot be used in the inchoative pattern: **The building destroyed/demolished*. Put in other words, the verbs *destroy* and *demolish* belong to the lexical class of 'cessation of existence', while *break* belongs to the lexical class of 'change of state'. Since different lexical classes show different constraints, the LCM postulates the existence of *Lexical Class* constraints (cf. Galera & Ruiz de Mendoza, 2012; Rosca, 2012).

High-level or logical structure also underlies the *Event Identification Condition*. The event structure of a lexical template and a constructional template must be the same for

subsumption to be possible. This constraint, however, can be overridden through (metaphorical or metonymic) re-construal, i.e. through the activity of an external constraint, as we have seen above in connection to the caused-motion use of activity verbs such as *giggle*, *stare*, *smile* and *chase* or the inchoative use of *open*. However, external re-construal can be prevented by the linguistic system creating a suppletive predicate that captures part of the event structure of a lexical item. This is the case of the change-of-state verb *kill*, which, unlike other verbs of its class, cannot be used in the inchoative construction: *The mouse killed (as an alternate of *The cat killed the mouse*). This use is not possible because English has lexicalized the BECOME **dead'** component of *kill* into the verb *die* (*The cat killed the mouse* > *The mouse died*). It may be observed that this constraint, which is called *Lexical Blocking*, can be at least partially overridden through meaning specialization. Consider the case of *take* and *go*, where the latter predicate captures only the telic part of the former, the causal ingredient being left out: *She took John to the station/John went to the station*. The first sentence is based on the caused-motion construction, while the second sentence makes use of the intransitive motion construction. Despite the existence of *go*, which acts as a suppletive predicate for *take*, it is possible to use *take* intransitively, as in *John took to the station*, which also codes telicity, simply because it contains more specific non-eventive meaning: *John took to the station* suggests that John went to the station for some purpose other than taking a train, such as looking for safety or in order to satisfy some specific need. This means that intransitive *take* is not necessarily blocked by *go* if there is extra non-eventive meaning. We call this phenomenon, which arises from lexical meaning, as *Lexical Blocking Override*. In the example that we have just discussed, *take* is subsumed into the intransitive motion construction through the licensing activity of a now conventionalized metonymic chain: from 'grasping with the hands' (*He took her hands in his*) to 'carrying in one's hands' (*He used to take his umbrella with him everywhere*), to 'causing to go to another place' (*This bus takes you to Central Station*), to 'causing to go to another place for safety' (*He took me to the shelter*), to 'going to another place for safety' (*He took to the shelter for safety*). All the links in the chain work on low-level lexical structure, except for the last one, which is a matter of high-level metonymy grounded in high-level metaphor (cf. Ruiz de Mendoza & Mairal, 2007; Ruiz de Mendoza & Pérez, 2011). In this metonymy, a causative accomplishment (causing someone to move along to a destination) is first presented as if it were an active accomplishment (someone moves along to a destination). This is the metaphor. Then, the active accomplishment, which is expressed linguistically, is made to stand for the causative accomplishment (since the actor is known to be the causer of his own motion to a place for a

specific purpose). This is the metonymy, which has the function of highlighting the non-causal part of the event chain by making it implicit, although recoverable.

One last constraint to consider in this section is the *Focal Compatibility Constraint*. One of the differences in constructional behavior between the verb *give* and *contribute* arises from this constraint. While *give* can be used both in the dative and the ditransitive constructions (e.g. *He gave the charity all his money/He gave all his money to the charity*), *contribute* is only possible with the dative (*He contributed all his money to the charity*; cf. **He contributed the charity all his money*). *Contribute* involves the existence of multiple donors to a common fund. In fact, this predicate highlights the existence of multiple donors over the object and the recipient of the contribution. While the dative construction is compatible with such focal prominence factor, the ditransitive is not. This is so because the ditransitive construction focalizes the possession relationship between the recipient and the given object. This clash between lexical and constructional focal requirements blocks out subsumption of *contribute* into the ditransitive construction.

5.1.2. Horizontal constraints

There are three such constraints. The first two have been described in Ruiz de Mendoza & Mairal (2008). The third one, which derives from work on constructional behavior carried out by Gonzálvez-García (2009), is a new proposal.

The first horizontal constraint is *Predicate-Argument Conditioning*. This constraint requires co-instantiation consistency between (i) a predicate and all of its arguments, and (ii) among arguments. Let us take the simplified representation of the caused-motion construction: X CAUSES Y TO MOVE Z. In this construction the argument Y (the object of motion) can be either human or non-human: *She pushed her husband out of the way*; *She pushed the table into a corner*. However, in the figurative use of the caused-motion construction, the nature of the Z element, which involves a resultant state, places constraints on the kind of Y element that we can have: *She drove her husband into despair*, but **She drove the book into despair*. In this case, the co-instantiation of the predicate ('drive') and the PP slot ('into despair') calls for a human Y argument.

The second horizontal constraint is called *Internal Variable Conditioning*. Internal variables, as we pointed out before, are the part of a lexical template that captures low-level (i.e. non-eventive) meaning elements, some of which are derived from world knowledge. For example, the verb *swell* involves the increase in size of an entity: *Membership in the club swelled*. When this verb is used figuratively in the caused-motion construction, its Y element needs to

be consistent with this fact: *Its membership swelled into the millions* (but cf. **Its membership swelled into a smaller amount*).

The third horizontal constraint, which we will call *Constructional Variable Conditioning*, derives from constructional requirements. Gonzálvez-García (2009) has made an exhaustive description of such elements for verbs taking part in the subjective-transitive construction. Consider *I found John an efficient plumber* versus **I found John a plumber*. The verb *find*, as used in this construction, calls for an evaluative element as the predicate complement of its object.

5.2. Amalgamation

Amalgamation is a level-internal process. It can have a lexical function. For example, through amalgamation it is possible to combine lexical items to one another thus giving rise to lexical (entrenched) complexes of various kinds, generally known as compounds. These can have different degrees of fixity. For example, *toothpaste* ('a paste used for cleaning teeth') is more fixed than *tomato paste* ('a paste made by cooking tomatoes whose skin and seeds have been removed'). Other compounds combine adjectives and nouns (*monthly ticket*), verbs and nouns (*bathing costume*), prepositions and nouns (*underwear*), prepositions and verbs (*overhear*), nouns and verbs (*hairdo*), adverbs and adjectives (*evergreen*), and adjectives and verbs (*dry-clean*). For a lexical amalgam to be such, the combination of predicates needs to denote an entity, an event or a situation that is differentiable from the one denoted by its component parts. The differentiation arises from the use of world knowledge to determine in what way the predicates combine. Since the overall meaning of a lexical amalgam is not necessarily predictable from the individual meaning of its component parts, each amalgam is assigned a lexical template of its own.

Another function of level-internal amalgams is grammatical. A case in point is the treatment of tense, aspect and modality. These classical grammatical phenomena are a matter of expressing how we envisage a state of affairs: tense places what we say within a framework of relative temporal relationships; aspect sees the content of an utterance as beginning, developing or ending; modality assesses such content in terms of what people say (*epistemic* modality), what the speaker believes (*subjective* modality), what we think should be the case (*deontic* modality) or the ability and willingness of a participant to make get a state of affairs to hold (*inherent* modality) (cf. Dik, 1997a). Language systems have different ways of conveying tense, aspect, and modality, which can also be left implicit. For example, expressing self-imposed obligation, which is a matter of deontic modality, can stand for the

desire to do something, which pertains to inherent modality, as in *I must speak to you, please* stands for 'I want to speak to you, please' (cf. Ruiz de Mendoza & Pérez, 2001: 347). When modality is marked explicitly, this is done by combining specific grammatical configurations with argument-structure representations. For example, the past simple *The cat chased the mouse* makes an amalgam of the regular past simple construction in English (V– *[e]d*) and the verb. Irregular pasts are considered fixed lexical constructions (e.g. *ran*) that are directly retrieved from the lexicon for lexical-constructional integration. Another way of signaling tense, aspect and modality is through level-1 idiomatic constructions that become amalgamated with argument-structure representations. Consider the assessment of possibility through the use of *may*. The form is *X May VP $_{NON-TO-INF}$*, where X is an NP or a sentence that is functionally equivalent to an NP: *What she said may be troubling to you*. The item "what she said" is obtained by subsuming the verb *say* into the *What-X$_{NP}$-VP* transitive construction and then saturating the constructional variable with a conceptually compatible NP. The item "be troubling to you" takes the 'non-to' infinitival form as a requirement of the *X May Y* construction. It subsumes the verb *be* into an argument-structure predicative construction that can further be optionally amalgamated with a *to*-PP.

5.3. Saturation of constructional variables

A constructional variable is an empty slot in a construction that requires saturation by a conceptual construct denoting an entity or a state of affairs that is construed as if it were an entity. Saturation can take place either through lexical mechanisms (e.g. the first participant in *The teacher came*), through constructional mechanisms (e.g. *What he saw terrified him*, whose subject is a whole proposition based on the *What-transitive* construction) or through cued inferencing, as we discussed above. For example, in the caused-motion construction, which we have characterized in 4.2 above, there are prototypically three variables *x*, *y*, and *z* (source and path variables can be added too). The first two are necessarily realized in formal expression, while the third variable can be left implicit. This means that this third one can be recovered inferentially. This is evident from the comparison of *The player kicked the ball [off the line]*, where *z* can be implicit, with **The player kicked off the line*, which is incorrect since the *y* variable has not been saturated.

In the case of argument-structure constructions, saturation takes place in accordance with principles of conceptual consistency. For example, *My roommate kicked the ball off the line* is feasible, although non-prototypical, while **The sunshine kicked the ball off the line* does not make sense. With idiomatic constructions containing variable elements, there is more than

just mere conceptual consistency. Kay & Fillmore's (1999) analysis of the *What's X Doing Y?* construction, which conveys an incongruity sense (e.g. *What's the child doing in the kitchen?*; *What's that doing in my library?*; *What's your social doing in my mobile?*) bears this point out. As these authors have noted, in this construction the verb form *doing* appears as complement of the copula *be*. For example, *What did the child keep doing in the kitchen?* does not convey the same sense of incongruity as *What's the child doing in the kitchen*? Furthermore, even though the verb *doing* is used in its progressive form, the construction can be used to refer to events that do not really involve progressive aspect (*What's that scratch doing on the table?*). There are other constraints. One is that the construction does not admit the use of *else*: **What else are you doing eating cold pizza?* (cf. *What else are you going to do?*). Another is that the construction does not permit negation of *do* or *be* (**What aren't the brushes doing soaking in water?*; *What are my brushes doing not soaking in water?*).

6. Meaning construction, meaning interpretation and formal expression

Despite its focus on "meaning construction" the LCM does not exclude considerations of formal expression including the syntactic arrangement of utterances. In fact, the LCM has made provision for the projection of semantic structure into syntax through its argument structure characterizations, as we have already noted. The notion of meaning construction does not exclude interpretation issues either. Thus, in specifying how meaning representations are created and expressed through formal structure in contexts of use, the LCM also gives an indirect account of how linguistic interpretation takes place. This does not mean that putting thoughts into linguistic expressions and deriving thoughts from linguistic expressions are exactly converse processes. What it means is that there is mutual feedback between the two: formal expression in language is the result of realizing conceptual representation; helping hearers to construct an intended conceptual representation is, in turn, the goal of specific formal arrangements, which are always planned in connection to the speaker's assessment of what contextual variables are manifest to the hearer, i.e. of what contextual information is mentally accessible to the hearer (cf. Sperber & Wilson, 1995, for a detailed discussion of the notion of mutual manifestness in speaker-hearer interaction).

Following up on the basic distinction that we have made between idiomatic and non-idiomatic constructions, we can distinguish two cases of formal realization: idiomatic and non-idiomatic. The former involves no special discussion since it is highly fixed. Its variable elements, when they are present, once saturated from a meaning perspective, are realized on the basis of non-idiomatic formal expression, which will be the concern of this section.

Non-idiomatic formal expression is a matter of, first, morphological and phonological/graphic realization, and, second, of syntactic arrangement as specified in the form part of integrated lexical and constructional templates. We shall not address phonological realization, since we assume that, except in the case of meaning-carrying suprasegmental phonology (e.g. stress patterns and intonational contours, which are themselves constructional thus being the object of constructional amalgamation with idiomatic constructions at the implicational, illocutionary and discourse levels), segmental phonology, like graphic representation, is not constructional per se.

The LCM recognizes the descriptive adequacy of postulating constructional templates (or schemas) explicitly coupling semantic and pragmatic meaning with a specification of morphological and syntactic patterns, as is done in RRG (e.g. Van Valin & La Polla, 1997; Van Valin, 2005; see also the developments in Diedrichsen, 2011, Nolan, 2011, and Jiménez & Luzondo, 2012). For example, the English resultative construction, according to Van Valin (2005: 239), contains the following specifications:

SYNTAX

Juncture: nuclear

Nexus: cosubordination

Construction type: serial verb

$[_{CL} [_{CORE} NP [_{NUC1} ...] NP [_{NUC2} ...]]]]$, $_{NUC2} \neq V$

Unit template(s): selected according to the syntactic template selection principles in (Van Valin, 2005: 130)

Privileged Syntactic Position (PSA): none

Linking: default

MORPHOLOGY: none

SEMANTICS: $[PRED_{NUC1}]$ CAUSE $[PRED_{NUC2}]$, $PRED_{NUC2}$ [+static]

PRAGMATICS:

Illocutionary force: unspecified

Focus structure: unspecified

This constructional template or schema responds to many of the requirements for a meaning construction/interpretation account of the canonical English resultative. In its formal part, unlike other constructions like the *be-passive*, which has idiosyncratic passive verb morphology, the resultative has no specific morphological marking, but it has a special syntax

where the undergoer NP is between two nuclei and only the first nucleus is a verbal predicate. In its meaning part, there is an abstract semantic representation, which captures the causative and resultative aspects of the construction. Illocutionary force and focus structure are left unspecified. The pairing form and function is carried out by the ascription of semantic and syntactic roles to the two nuclei.

There are, however, some essential differences with the LCM treatment of constructional templates. The first difference concerns the illocutionary and discourse values, which in the LCM are obtained though cued inferencing or subsumption into levels 3 and 4 of its architecture. The second is that the LCM, as is evident from our discussion in section 4.2, provides a richer semantic specification for constructional templates. Thus, the meaning part of the resultative template takes into account several non-trivial facts about resultative constructions: (i) the instrumentality of the action is given conceptual prominence, which is captured by the amalgam of constructional functions INVOLV1MEANSe1; (ii) the actor's action can be intense enough to achieve the desired outcome, as captured by the optional intensifying function MAGN; (iii) the resultant state is the end-point of a process, which is captured by the primitive BECOME in connection to the resultant state. These facts are present in the description given in 4.2, which we repeat here for convenience:

[(MAGN) INVOLV1MEANSe1][**do'**(x,∅)] CAUSE [BECOME **pred'**(y)], x = 1
'The first participant acts in such a way that the first participant causes a new state to come about'

In the LCM the formal part of the template is realizational. Its function is to specify the range of grammatical resources available for each meaning element in the event-structure characterization of the template, which is responsible for syntactic projection:

x => NP
∅ => unspecified (either an NP or none)
y => AP$_{RESULT}$/PP$_{RESULT}$

The arrow is to be read as "is realized by" and the slash / as "either … or". A non-amalgamated realization of the resultative has a canonical arrangement, which takes the following form:

$$NP\ (x) + [V+NP_{OBJ}\ (\varnothing)]_{VP} + AP_{RESULT}/PP_{RESULT}\ (y)$$

The full constructional template can be thus summarized as follows:

[(MAGN) INVOLV1MEANSe1]	$[\mathbf{do'}(x,\varnothing)]$ CAUSE [BECOME **pred'**(y)], x = 1
	x => NP $\varnothing$ => unspecified (either an NP or none) y => AP_{RESULT}/PP_{RESULT}
	$NP\ (x) + [V+NP_{OBJ}\ (\varnothing)]_{VP} + AP_{RESULT}/PP_{RESULT}\ (y)$

Full formal expression requires (in this order): (i) subsumption of a verbal predicate into the construction; (ii) obligatory amalgamation with tense and aspect constructions, and optionally with modality constructions and with other level-1 constructions conveying time, location, instrument, manner, etc.; (iii) external variable saturation; (iv) optionally, subsuming the output of (i)-(iii) into level-2, level-3, and level-4 constructions. It must be remembered that representations can be left incomplete even at level 1, to be completed through cued inferencing in order to endow them with full meaning import at the levels of argument-structure, pragmatic implication, illocution and discourse. For example, from an illocutionary perspective *You are going to eat yourself to death* is more than a statement of fact, which is the default illocutionary force of the argument-structure canonical resultative construction. At level 3 of the LCM, through cued inferencing, it can easily be taken as a warning. Then, at level 4, we may make it, through completion, part of a condition-consequence sequence (cf. Mairal & Ruiz de Mendoza, 2009): e.g. *You are going to eat yourself to death* [if you keep eating at that rate]. Finally, this sentence, from the point of view of pragmatic implication, carries with it an obvious hyperbolic ingredient, which is treated at level 2 through converse reinforcement/mitigation operations working on the scalar cognitive model of quantity (cf. Ruiz de Mendoza, 2011, for details on the pragmatic treatment of hyperbole on the basis of cognitive operations).

7. Conclusion

This paper has given an overview of the contribution of the LCM to our understanding of meaning construction, meaning interpretation and formal expression. It has placed emphasis on the role of constructional meaning in this process, while making critical revisions of other

constructionist accounts of language in use, whether cognitivist or functionalist. In so doing, it has gone beyond the frequency criterion to determine whether a form-meaning paring can be considered a construction; in its place, it has posited the notion of replicability, which allows the analyst to give constructional status to non-frequent form-meaning pairings provided that they can be felt by competent native speakers as not doing violence to the nature of the language to which the construction belongs. The paper has also argued that verbal meaning is always projected into syntax through constructional meaning. This leads to a view of compositionality that is markedly different from the one in Langacker's Cognitive Grammar: meaning is not composed by means of assemblies of concepts, but rather by making use of the conceptual scaffolding provided by constructions. Then, the paper has discussed the architecture of the LCM in terms of the kinds of cognitive models that it exploits in order to make meaning, and it has described this process from the point of view of the descriptive and explanatory tools of the LCM. It has thus dealt with processes such as subsumption, amalgamation, and saturation of variables, while discussing the specific role of each process at the various descriptive levels of the model. Finally, it has related formal expression to meaning representation in terms of idiomatic and non-idiomatic constructions. In this connection it has specified the requirements for full formal expression and related them to the format of constructional templates in the LCM.

References

Bach, Kent. 1994. Conversational implicature. *Mind and Language* 9(2): 124-162.

Baicchi, Annalisa. 2011. Metaphoric motivation in grammatical structure. The case of the caused-motion construction from the perspective of the Lexical-Constructional Model". In *Motivation in Lexicon, Grammar, and Discourse*, Günter Radden, Klaus Uwe Panther & Peter Koch (eds), 149-170. Amsterdam: John Benjamins.

Barnden, John A. 2010. Metaphor and metonymy: Making their connections more slippery. *Cognitive Linguistics* 21(1): 1-34.

Bender, Emily & Kathol, Andreas. 2001. Constructional effects of Just Because... Doesn't Mean... In *Proceedings of the 27th Annual Meeting of the Berkeley Linguistics Society.* Berkeley CA: CLS.

Bencini, Giulia M. L., & Goldberg, Adele E. 2000. The contribution of argument structure constructions to sentence meaning. *Journal of Memory and Language* 43: 640-651.

Bergen, Benjamin K. & Chang, Nancy. 2005. Embodied construction grammar in simulation-based language understanding. In *Construction Grammars: Cognitive Grounding and Theoretical Extensions*, Jan-Ola Östman & Mirjam Fried (eds), 147-190. Amsterdam: John Benjamins.

Boas, Hans C. 2003. *A Constructional Approach to Resultatives.* Stanford: CSLI Publications.

Boas, Hans C. 2008. Determining the structure of lexical entries and grammatical constructions in Construction Grammar. *Annual Review of Cognitive Linguistics* 6: 113-144.

Boas, Hans C. 2011. Coercion and leaking argument structures in Construction Grammar. *Linguistics* 49(6): 1271-1303.

Butler, Christopher S. 2009. The Lexical Constructional Model: Genesis, strengths and challenges. In *Deconstructing Constructions* [Studies in Language Companion Series 107], Christopher S. Butler & Javier Martín Arista (eds), 117-151. Amsterdam: John Benjamins.

Butler, Christopher S. 2012. Constructions in the Lexical Constructional Model. This volume.

Bybee, Joan. 2006. From usage to grammar: The mind's response to repetition. *Language* 82 (4), 711-733.

Carston, Robyn. 2002. *Thoughts and Utterances: The Pragmatics of Explicit Communication.* Oxford: Basil Blackwell.

Carston, Robyn. 2004. Explicature and semantics. In *Semantics: A reader*, Stephen Davis & Brendan S. Gillon (eds), 817-845. Oxford: OUP.

Croft, William. 2001. *Radical Construction Grammar: Syntactic Theory in Typological Perspective*. Oxford: Oxford University Press.

De Beaugrande, Robert-Alain & Dressler, Wolfgang. 1981. *Introduction to Text Linguistics*. London/New York: Longman.

Del Campo, Nuria. 2011. Cognitive modeling in illocutionary meaning. *Review of Cognitive Linguistics* 9(2): 392-412.

Diedrichsen, Elke. 2011. The theoretical importance of constructional schemas in RRG. In Wataru Nakamura (ed.), *New Perspectives in Role and Reference Grammar,* 168-197. Newcastle upon Tyne: Cambridge Scholars Publishing.

Dik, Simon C. 1997a. *The Theory of Functional Grammar: The Structure of the Clause*. Berlin/New York: Mouton de Gruyter.

Dik, Simon C. 1997b. *The Theory of Functional Grammar: Complex and Derived Constructions*. Berlin/New York: Mouton de Gruyter.

Dirven, René & Ruiz de Mendoza, Francisco. 2010. Looking back at 30 years of Cognitive Linguistics. In *Cognitive Linguistics in Action: From Theory to Application and Back*, Elżbieta Tabakowska, Michał Choiński & Łukasz Wiraszka (eds), 13-70. Berlin/New York: Mouton de Gruyter.

Faber, Pamela & Mairal, Ricardo. 1999. *Constructing a Lexicon of English Verbs*. Berlin/New York: Mouton de Gruyter.

Fillmore, Charles J. 1982. Frame semantics. In *Linguistics in the Morning Calm*, The Linguistic Society of Korea (ed), 111-137. Seoul: Hanshin Pub. Co.

Fillmore, Charles J., Kay, Paul, & O'Connor, Catherine. 1988. Regularity and idiomaticity in grammatical constructions: The case of *let alone*. *Language* 64: 501-538.

Fillmore, Charles J., & Atkins, Beryl T. S. 2000. Describing polysemy: The case of 'crawl'. In *Polysemy: Theoretical and Computational Approaches*, Yael Ravin & Claudia Leacock (eds), 91-110. Oxford: Oxford University Press.

Fillmore, Charles J., Johnson, Christopher R. & Petruck, Miriam R. L. 2003. Background to FrameNet. *International Journal of Lexicography* 16(3), 235-250.

Fillmore, Charles J., Kay, Paul, Michaelis, Laura A. & Sag, Ivan. 2004. *Construction Grammar*. Stanford, Calif.: CSLI Publications.

Galera, Alicia & Ruiz de Mendoza, Francisco. 2012. Lexical class and perspectivization constraints on subsumption in the Lexical Constructional Model: The case of *say* verbs in English. *Language Sciences* 34(2012): 54-64.

Goddard, Cliff & Wierzbicka, Anna (eds). 1994. *Semantic and Lexical Universals. Theory and Empricial Findings*. Amsterdam: John Benjamins.

Goddard, Cliff & Wierzbicka, Anna (eds). 2002. *Meaning and Universal Grammar*. Amsterdam: John Benjamins.

Goldberg, Adele. 1995. *A Construction Grammar Approach to Argument Structure*. Chicago: University of Chicago Press.

Goldberg, Adele. 2002. Surface generalizations: An alternative to alternations. *Cognitive Linguistics* 13: 327-356.

Goldberg, Adele. 2006. *Constructions at Work: The Nature of Generalization in Language.* Oxford: Oxford University Press.

Goldberg, Adele & Jackendoff, Ray S. 2004. The English resultative as a family of constructions. *Language* 80: 532-568.

Gonzálvez-García, Francisco & Butler, Christopher S. 2006. Mapping functional-cognitive space. *Annual Review of Cognitive Linguistics* 4, 39-96.

Gonzálvez-García, Francisco. 2009. The family of object-related depictives in English and Spanish: Towards a usage-based, constructionist analysis. *Language Sciences* 31(5), 663-723.

Halliday, Michael A. K. & Matthiessen, Christian. 2004. *An Introduction to Functional Grammar.* 3rd ed., revised by Christian M. I. M. Matthiessen. London: Arnold.

Jackendoff, Ray. 1997. Twistin' the night away. *Language* 73: 534–559.

Jiménez, Rocío & Pérez Cabello de Alba, Mª Beatriz. 2008. Lexical representation within the Lexical Constructional Model: An analysis of verbs of *happiness* and *happening*. *Revista Española de Lingüística Aplicada* 21: 129-146.

Jiménez, Rocío & Luzondo, Alba. 2012. Constructions in Role and Reference Grammar: The case of the English resultative. This volume.

Johnson, Mark. 1987. *The body in the Mind: The bodily Basis of Meaning, Imagination, and Reason*. Chicago: University of Chicago Press.

Kay, Paul & Fillmore, Charles J. 1999. Grammatical constructions and linguistic generalizations: The 'What's X doing Y' construction. *Language* 75: 1-33.

Lakoff, George 1987. W*omen, Fire, and Dangerous Things: What Categories Reveal about the Mind*. Chicago: The University of Chicago Press.

Lakoff, George & Johnson, Mark. 1999. *Philosophy in the Flesh*. New York: Basic Books.

Langacker, Ronald W. 1987. *Foundations of Cognitive Grammar*, *Vol. 1: Theoretical prerequisites*. Stanford, CA: Stanford University Press.

Langacker, Ronald. W. 2000. *Grammar and Conceptualization.* Berlin/New York: Mouton de Gruyter.

Langacker, Ronlad W. 2003. Constructions in Cognitive Grammar. *English Linguistics* 20: 41-83.

Langacker, Ronald W. 2005. Construction Grammars: Cognitive, radical and less so. In *Cognitive Linguistics: Internal Dynamics and Interdisciplinary Interaction* [Cognitive Linguistics Research 32], Francisco Ruiz de Mendoza & Sandra Peña Cervel (eds), 101-159. Berlin/New York: Mouton de Gruyter.

Langacker, Ronald W. 2008. *Cognitive Grammar. A Basic Introduction*. Oxford: Oxford University Press.

Luzondo, Alba. 2013. Constraining factors on the family of resultative constructions. *Review of Cognitive Linguistics* 11(1). In press.

Mairal, Ricardo & Faber, Pamela. 2002. Functional Grammar and lexical templates. In *New Perspectives on Argument Structure in Functional Grammar*, Ricardo Mairal & Mª Jesús Pérez (eds), 41-89. Berlin/New York: Mouton de Gruyter.

Mairal, Ricardo & Faber, Pamela. 2005. Decomposing semantic decomposition. *Proceedings of the 2005 International Conference on Role and Reference Grammar*, 279-308. Academia Sinica: Taiwan.

Mairal, Ricardo & Faber, Pamela. 2007. Lexical templates within a functional cognitive theory of meaning. *Annual Review of Cognitive Linguistics* 5: 137-172.

Mairal, Ricardo & Ruiz de Mendoza, Francisco. 2008. New challenges for lexical representation within the Lexical-Constructional Model. *Revista Canaria de Estudios Ingleses* 57: 137-158.

Mairal, Ricardo & Ruiz de Mendoza, Francisco. 2009. Levels of description and explanation in meaning construction. In *Deconstructing Constructions* [Studies in Language Companion Series 107], Christopher S. Butler & Javier Martín Arista (eds), 153-198. Amsterdam: John Benjamins.

Mel'cuk, Igor A. & Wanner, Leo. 1996. Lexical functions and lexical inheritance for emotion lexemes in German. In *Recent Trends in Meaning-Text Theory*, Leo Wanner (ed), 209-227. Amsterdam: John Benjamins.

Mel'cuk, Igor 1989. Semantic primitives from the viewpoint of the Meaning-Text Linguistic Theory. *Quaderni di Semantica* 10(1): 65-102.

Michaelis, Laura. 2003. Word meaning, sentence meaning, and syntactic meaning. In *Cognitive Approaches to Lexical Semantics*, Hubert Cuykens, René Dirven & John R. Taylor (eds), 93-122. Berlin/New York: Mouton de Gruyter.

Nolan, Brian. 2011a. Meaning construction and grammatical inflection in the layered structure of the Irish word: An RRG account of morphological constructions. In

Wataru Nakamura (ed.), *New Perspectives in Role and Reference Grammar,* 64-101. Newcastle upon Tyne: Cambridge Scholars Publishing.

Peña, Sandra. 2008. Dependency systems for image-schematic patterns in a usage-based approach to language. *Journal of Pragmatics* 40(6), 1041-1066.

Peña, Sandra. 2009. Constraints on subsumption in the caused-motion construction. *Language Sciences* 31: 740-765.

Pérez, Lorena & Peña, Sandra. 2009. Pragmatic and cognitive constraints on lexical-constructional cubsumption. *Atlantis* 31(2): 57-73.

Pérez, Lorena & Ruiz de Mendoza, Francisco. 2011. A Lexical-Constructional Model account of illocution. *Vigo International Journal of Applied Linguistics* 8: 99-138.

Recanati, François. 1989. The pragmatics of what is said. *Mind and Language* 4: 294-328.

Rosca, Andreea. 2012. Accounting for the constructional behavior of "Fetch", "Find", "Gather" and "Reach". *Revista Canaria de Estudios Inglese,* 64: 161-176.

Ruiz de Mendoza, Francisco & Mairal, Ricardo. 2008. Levels of description and constraining factors in meaning construction: An introduction to the Lexical Constructional Model. *Folia Linguistica* 42(2): 355-400.

Ruiz de Mendoza, Francisco & Gonzálvez-García, Francisco. 2011a. Constructional integration in the Lexical Constructional Model. *BAS (British and American Studies)* XVII, 75-95.

Ruiz de Mendoza, Francisco & Gonzálvez-García, Francisco. 2011b. Illocutionary meaning revisited: Subjective-transitive constructions in the Lexical-Constructional Model. In

Turning Points in the Philosophy of Language and Linguistics [Łódź Studies in Language], Piotr Stalmaszczyk (ed), 65-77. Frankfurt am Main: Peter Lang.

Ruiz de Mendoza, Francisco. 2007. High level cognitive models: In search of a unified framework for inferential and grammatical behavior. In *Perspectives on metonymy*, Krzysztof Kosecki (ed), 11-30. Frankfurt am Main: Peter Lang.

Ruiz de Mendoza, Francisco. 2011. Metonymy and cognitive operations. In *Defining Metonymy in Cognitive Linguistics: Towards a Consensus View*, Reka Benczes, Antonio Barcelona Sánchez & Francisco Ruiz de Mendoza Ibáñez (eds), 103-124. Amsterdam: John Benjamins.

Ruiz de Mendoza, Francisco & Díez, Olga. 2002. Patterns of conceptual interaction. In *Metaphor and Metonymy in Comparison and Contrast*, René Dirven & Ralf Pörings (eds), 489-532. Berlin: Mouton de Gruyter.

Ruiz de Mendoza, Francisco & Pérez, Lorena. 2003. Cognitive operations and pragmatic implication. In *Metonymy and Pragmatic Inferencing*, Klaus-Uwe Panther & Linda Thornburg (eds), 23-50. Amsterdam: John Benjamins.

Ruiz de Mendoza, Francisco & Peña, Sandra. 2005. Conceptual interaction, cognitive operations and projection spaces. In *Cognitive Linguistics: Internal Dynamics and Interdisciplinary Interaction*, Francisco Ruiz de Mendoza Ibáñez & Sandra Peña (eds), 254-280. Berlin/New York: Mouton de Gruyter.

Ruiz de Mendoza, Francisco & Mairal, Ricardo. 2011. Constraints on syntactic alternation: lexical-constructional subsumption in the Lexical-Constructional Model. In *Morphosyntactic Alternations in English. Functional and Cognitive Perspectives*, Pilar Guerrero (ed), 62-82. London, UK/ Oakville, CT: Equinox.

Ruiz de Mendoza, Francisco & Pérez, Lorena. 2011. The contemporary theory of metaphor: Myths, developments and challenges. *Metaphor and Symbol* 26, 161-185.

Ruiz de Mendoza, Francisco & Luzondo, Alba. 2012. Lexical-constructional subsumption in resultative constructions in English. In *Cognitive Linguistics. Between Universality and Variation,* Mario Brdar, Milena Zic Fuchs, Ida Raffaelli, Mateusz-Milan Stanojevic & Nina Tudjman Vukovic (eds). Newcastle upon Tyne: Cambridge Scholars Publishing; in press.

Trappes-Lomax, Hugh. 2004. Discourse analysis. In *The Handbook of Applied Linguistics*, Alan Davies & Catherine Elder (eds), 133-164. Oxford: Blackwell.

Van Dijk, Teun A. & Kintsch, Walter. 1983. *Strategies of Discourse Comprehension.* New York: Academic Press.

Van Valin, Robert D. Jr. 2005. *Exploring the Syntax-Semantics Interface*. Cambridge: CUP.

Van Valin, Robert D. Jr. & LaPolla. Randy J. 1997. *Syntax: Structure, Meaning and Function*. Cambridge: CUP.

Wierzbicka, Anna. 1996. *Semantics: Primes and Universals.* Oxford: Oxford University Press.

Wierzbicka, Anna. 1999. *Emotions across Languages and Cultures. Diversity and Universals*. Cambridge: Cambridge University Press.