DOI: http://dx.doi.org/10.18226/19844921.v10.n20.04
Artigo de autores convidados para o dossiê

COGNITIVE MODEL TYPES AND THE *CONSTRUCTICON*[*]

TIPOS DE MODELOS COGNITIVOS E A *CONSTRUCTICON*

Francisco Ruiz de Mendoza Ibáñez[**]
Alba Luzondo Oyón[***]

ABSTRACT
Construction Grammar approaches assume the existence of a *constructicon*, i.e. a network of grammatical constructions, or the conventionalized form-meaning pairings of a given language. However, construction grammarians generally offer analyses of constructions at one specific level of linguistic enquiry, without exploring the connections that exist with constructions belonging to other levels of description. The constructicon as a whole is thus hardly ever accounted for in a single explanatory theory or approach. Moving towards a more holistic view of language, this paper discusses the way in which a Construction Grammar model (the *Lexical Constructional Model*) deals with constructions of diverse nature and complexity and with parallel inferential meaning-making mechanisms by relating both to the common idealized cognitive model types that they exploit.
KEYWORDS
Construction Grammars; constructicon; construction; idealized cognitive model.

RESUMO
Abordagens da gramática de construção assumem a existência de uma *constructicon*, ou seja, uma rede de construções gramaticais, ou de pareamentos convencionalizados de forma-significado de uma dada língua. Contudo, gramáticos de construções geralmente analisam construções em um nível específico de investigação linguística, sem explorarem as conexões que existem com construções que pertencem a outros níveis de descrição. A construção como um todo é, portanto, difícilmente contabilizada em uma única teoria explicativa ou abordagem. Direcionando o olhar para uma visão mais holística da língua, este trabalho discute o modo como um modelo de Gramática de Construções (o *Modelo Construcional Lexical*) lida com construções de natureza e complexidade diversas e com mecanismos de construção de sentidos inferenciais paralelos por relacioná-los com tipos de modelos cognitivos idealizados que tais construções exploram.
PALAVRAS-CHAVE
Gramáticas de construção; constructicon; construção; modelo cognitivo idealizado.

[*] The research for this paper has been financed by the Spanish Ministry of Economy and Competitiveness, grants no. FFI2017-82730-P and FFI2014-53788-C3-1-P. A preliminary version of this paper was published as Ruiz de Mendoza and Luzondo (2017).
[**] Universidad de La Rioja (Spain). E-mail: francisco.ruizdemendoza@unirioja.es.
[***] Universidad Nacional de Educación a Distancia, Madrid (Spain). E-mail: aluzondo@flog.uned.es.

1 INTRODUCTION

Construction Grammars (CxG(s)) are a family of compatible cognitive-linguistic approaches that provide a psychologically plausible theory of language (cf. HOFFMANN; TROUSDALE, 2013; BUTLER; GONZÁLVEZ-GARCÍA, 2014; HOFFMANN, 2017). Among the approaches that make up this family we find the following: *Cognitive CxG* (GOLDBERG, 1995, 2006), *Embodied CxG* (BERGEN; CHANG, 2005), *Fluid CxG* (VAN TRIJP, 2011), and *Radical CxG* (CROFT, 2001). These and other accounts share the central assumption that *grammatical constructions*, or conventionalized form-meaning pairings, are the fundamental units in language. Constructions occur at all levels of grammatical analysis, ranging from affixes, through words, (partially) filled idioms, predicate-argument structures, to abstract discourse units, all of which are distributed along a lexicon-syntax continuum (GOLDBERG, 2003, 2006, p. 5, 2013, p. 17). As can be seen, constructions differ in size, nature and complexity, but together they form a single vast structured network generally termed the *constructicon.*

Despite sharing common assumptions, each approach varies in emphasis and focus (see HOFFMANN, 2017 for details). For example, Goldberg's Cognitive CxG places heavy emphasis on the usage-based nature of the approach, its psychological plausibility, the motivation behind constructions, and the search for robust generalizations (GOLDBERG, 2006, p. 213-226). Formalization in Cognitive CxG, however, is kept to a minimum (BOAS, 2013, p. 248-49). By contrast, Fluid CxG –which, together with Embodied CxG, is one of the growing computational CxGs– has been developed specifically for building deep production and comprehension systems that can act as the core of human-robot interactions (STEELS, 2012). In turn, Croft's Radical CxG has been designed for typological purposes. In addition, while most CxGs are usage-based, some approaches endorse a complete inheritance view, according to which inherited information is only stored once, namely at the most abstract level. This is the case of *Berkeley CxG* (FILLMORE, 2013) and *Sign-Based CxG* (SAG; BOAS; KAY, 2012).

Whichever the specific focus, CxG approaches tend to provide (qualitative and/or quantitative) analyses of specific linguistic constructions at some level of linguistic enquiry, either in isolation or, more occasionally, via family resemblance (e.g. GOLDBERG; JACKENDOFF, 2004). However, the theory-internal, compartmentalized analyses offered are generally at odds with the very notion of a constructicon that accommodates structures of such varied nature. If the totality of our knowledge of language is captured in the constructicon, shouldn't CxGs design models with explanatory potential to deal with, motivate, and constrain constructions at all levels and in all domains of description?

Perhaps because of their drastic departure from the postulates of formal linguistics on the organization of grammar, construction grammarians do not see the need to endow their accounts with an architecture consisting of components, layers, or levels. The cognitively-oriented inferential and constructionist account known as the *Lexical Constructional Model* (LCM) (RUIZ DE MENDOZA, 2013; RUIZ DE MENDOZA;

GALERA, 2014) is an exception to this. The LCM distinguishes the following meaning construction levels which incorporate constructions that have generally been studied in isolation: predicational structure (with lexical and argument-structure sublevels; e.g. the reduplicative; GHOMESHI *et al.*, 2004, and the resultative; BOAS, 2003), implicational structure (e.g. *What's X Doing Y*?; KAY; FILLMORE, 1999), illocutionary structure (e.g. *Can You X, (please)?*; cf. STEFANOWITSCH, 2003), and discourse structure (e.g. X *Let Alone Y*; FILLMORE; KAY; O'CONNOR, 1988). Elaborating on preliminary proposals in this respect (e.g. RUIZ DE MENDOZA, 2013; RUIZ DE MENDOZA; GALERA, 2014), our aim is to supply a classification of cognitive model types and then relate each descriptive level of the LCM to the kind of cognitive model underlying the semantic base of both constructions and language-based inferences. In addition, we seek to illustrate how constructional phenomena can be motivated by paying attention to the activity of cognitive operations on cognitive models (see RUIZ DE MENDOZA, 2017). As a result, we show how a CxG model can deal with the totality of the constructicon on the basis of a common set of cognitive models and cognitive operations, a theoretical possibility that has thus far remained unexplored in the family of CxGs.

To achieve these aims, we have structured this paper as follows. Section 2 presents the typology of cognitive models put forward by LCM proponents. Section 3 onwards shows how the conceptual structures presented in Section 2 lie at the basis of constructions as entrenched form-meaning representations of varied nature and complexity and of less entrenched representations involving inferential skills for interpretation. Section 4 summarizes the main contents of the paper.

2 A TYPOLOGY OF COGNITIVE MODELS

Idealized Cognitive Models (ICMs) are internally coherent mental representations of the world of our inner and outer experience. Lakoff (1987) distinguished four types of ICMs, namely, *frames*, *image-schemas*, *metaphor* and *metonymy*. Frames are conceptual characterizations of entities, states, situations, and events (FILLMORE, 1982). CxG approaches such as those by Goldberg (1995) and Boas (2003, 2010) have applied the notion of frame to describe how the semantic roles of verbs are realized syntactically. In turn, image-schemas are schematizations of sensorimotor experience (e.g. up/down, path, in/out, etc.). Metaphor is a set of correspondences across two discrete conceptual domains, where one domain, the source, allows speakers to understand and reason about another domain, called target domain (e.g. LIFE IS A JOURNEY, *I feel lost in life*; LAKOFF; JOHNSON, 1980, 1999). Finally, metonymy is a domain-internal conceptual relation in which the source domain provides access to the target domain, for which it stands (e.g. CONTENTS FOR CONTAINER, *Pass the salt, please* 'the salt shaker'; LAKOFF; JOHNSON, 1980).

All the work on ICMs takes Lakoff's (1987) initial distinctions for granted. However, a finer-grained classification is found in the LCM (see RUIZ DE MENDOZA; GALERA, 2014, pp. 63-74; RUIZ DE MENDOZA, 2013, 2017). In this model, the

constructicon is distributed across several types of world-knowledge structure that gives shape to the semantic pole of constructions and inference-based representations. Thus, a taxonomy of ICMs is established along the following parameters: (i) the *situational* or *non-situational* (*propositional*) nature of the model; (ii) the degree of genericity that they involve, which underlies the distinction between *primary*, *low-level* and *high-level* ICMs; (iii) whether the concept is *scalar* or not (see Section 3.1).

On the one hand, a propositional ICM captures information pertaining to entities, their properties and their relations in non-situational scenarios. On the other, situational ICMs, also called *scenarios*, are characterized as coherently related conventional series of events. Regarding the degree of genericity of the ICM, we may distinguish between primary, low-level and high-level cognitive models. Primary ICMs are knowledge constructs that arise directly from our sensorimotor experience (e.g. container, path, part-whole, etc.). While low-level ICMs involve objects, their properties and relations in our perceptually accessible experience (e.g. objects like *bicycle*, *mother*, and scenarios like *going to a restaurant*), high-level models are not directly derivable from perceptual access. Rather, they are constructed on the basis of generalizations over elements that are shared by multiple low-level models (e.g. the notions of action, result, cause-effect, speech act categories, etc.).

The parameters in (i) and (ii) can be combined. For example, propositional ICMs can have a low or a high-level status. Thus, while a verbal predicate makes use of a low-level propositional ICM, an argument-structure construction like the resultative is based on a high-level propositional ICM, since it emerges through a process of generalization over multiple specific verbs whose semantics display a result ingredient (e.g. *kill*, *break*, *shove*, etc.). The same rationale applies to situational cognitive models, which lie at the basis of inferential activity. An interesting contribution made by the LCM is that there is no essential difference between situation-based implicature and illocutionary force, in the sense that both are based on a metonymic inferential schema whose scope of action is a situational model. The difference, however, lies in the level of genericity of the ICM involved. That is, while implicational constructions (e.g. *Who's been screwing with my inspirational slogans?*; COCA 2005[1]) exploit low-level situational scenarios, illocutionary constructions make use of high-level ones (e.g. *Now do as I say!*; COCA 2010). Notwithstanding similarities, as will be shown in Section 3.2, a finer-grained classification of situational models is required to distinguish between structures such as those in (1) and (2):

(1) Speaker A: How did you get to manage your anxiety attacks?
Speaker B: I found meditation really helpful.

(2) Harry, what's your stuff doing on the card table? (COCA 2014).

[1] COCA stands for the *Corpus of Contemporary American English*. Available at: <https://corpus.byu.edu/coca/>. Access on: April 18, 2018.

Readers will note that the B's response to A in (1) is a classic example of situation-based implicature, which is to be worked out inferentially. However, (2) contains an entrenched meaning implication that the speaker is bothered by the situation described in the non-interrogative elements of the sentence. The implication is not explicit (i.e. it is not derived compositionally), but it is stably associated with the construction type, already studied by Kay and Fillmore (1999) as the *What's X Doing Y?* construction.

3 COGNITIVE MODELS BEHIND THE CONSTRUCTICON

In the LCM, the conceptual structures presented above are exploited either via lexical and constructional mechanisms, or through inferential processes. In other words, meaning construction combines so-called 'coded' constructions with 'non-coded' or inferred representations, both of which rely on the taxonomy of ICMs provided in Section 2. Note that the notion of coding is the grammatical counterpart of the cognitive and functional (or even socio-linguistic) notions of entrenchment and conventionalization respectively. Thus, non-coded representations are in principle non-conventional and non-entrenched. However, since humans make inferences along established pathways, speakers rely on non-coded meaning construction in the confidence that hearers will have the capability of working out the relevant implications.

While coded or conventionalized constructions arise from lexicogrammar, inferred meaning implications are calculated by means of contextual factors and world knowledge. The caused-motion construction in examples like *Pat sneezed the napkin off the table*, implicational constructions such as *What's X Doing Y?*, illocutionary patterns like *Can you X?*, and discourse structure (e.g. *X Let Alone Y*) are all cases of coded constructions. In turn, a negative state remark (HOLTRAGVES, 1994) such as *I'm thirsty*, which can count as in indirect form of request, but also as a complaint, is an example of a non-coded representation.

Unlike the rest of CxG approaches, meaning construction in the LCM covers the use of entrenched constructions as well as inferred representations, and it does so in terms of cognitive modeling. The following subsections explore these issues at different levels of linguistic enquiry.

3.1 ARGUMENT-STRUCTURE CONSTRUCTIONS AND BELOW

Below the level of argument-structure, self-standing constructions (e.g. lexical items) and dependent constructions (e.g. the affix *–s*) are, as much as argument-structure characterizations, grounded in an ICM type (RUIZ DE MENDOZA, 2015, p. 260). An affix, for example, whether inflectional or derivational, is not a self-standing construction, in the sense that it depends on other constructional items to make sense. However, affixes contribute generic-level meaning to the lexical structure to which they are attached. Take the case of the English plural *–s*, which is evidently related to the notion of 'multiplicity' (LAKOFF, 1987). Although multiplicity is an abstract concept, its origin is perceptual, since it is obtained from our experience of counting objects that can

be perceptually distinguished from one another. This means that the derivational affix *–s* is based on a primary ICM.

In turn, lexical constructions capture meaning that arises from either primary or low-level propositional ICMs (e.g. physical entities such as *rock*, dynamic events like *climbing*, etc.). Although lexical structure can stand on its own, it can be combined with constructions that also exploit low-level non-situational ICMs, or it can be integrated into propositional ICMs of a higher-level nature. In the LCM, these two types of conceptual integration process, which work at all levels of description and explanation, are respectively labeled *amalgamation* and *subsumption.* Let us discuss them separately.

Amalgamation covers cases in which there is a combination of structure that belongs to the same level of description (RUIZ DE MENDOZA, 2013, p. 255). For example, lexical items can be amalgamated into compounds of various kinds, namely, [Prep+N] (e.g. *outbreak*), [N+N] (e.g. *bedroom*), [V+V] (e.g. *hearsay*), etc. One interesting feature of such amalgams is that their interpretation is often non-transparent because of the frequent non-compositional nature of meaning (i.e. the whole exceeds the sum of the parts; cf. LANGACKER, 1987, 1999; GOLDBERG, 1995, 2006). Consider the case of *hearsay*, which refers to unverified information that people hear and pass on to others by word of mouth (sometimes not in the same terms). The idea that the information conveyed is unsubstantiated, which goes beyond the default potential of both *hear* ('perceive a sound') and *say* ('utter words'), can be traced to real-life scenarios where people unduly disclose information as soon as they get it. Scenarios like this act as a licensing factor for the amalgam of *hear+say* to be possible with the meaning that has been conventionally associated to it. Another example of amalgamation at the lexical level is found in contrastive-focus reduplication constructions like *I'll make the tuna salad and you make the SALAD-salad* (GHOMESHI *et al.*, 2004, p. 311). In realizations of this kind, lexical structure, which, as previously noted, is based on low-level propositional ICMs, is repeated to convey a special non-compositional meaning effect. In Spanish, for example, there are highly conventionalized expressions like those in (3):

(3) a. Pero café-café, no sucedáneos, ¿eh? (CREA 1998).[2]
But coffee-coffee, not substitutes, ok?
'But coffee-coffee, not a substitute, ok?'
b. Feo-feo de dar miedo no, pero está tan flaco (CREA 2002).
Ugly-ugly to give fear not, but (he) is so skinny.
'He is not scary-ugly, but he is so skinny'.

The effect achieved by reduplication is that the linguistic structures in (3ab) receive a prototypical interpretation, often in contrast to a less prototypical entity or feature, which is sometimes overtly expressed for clarification purposes (e.g. *It is YELLOW-yellow, not lemon yellow*; GHOMESHI *et al.*, 2004, p. 319). For example,

[2] CREA stands for the *Corpus de Referencia del Español Actual*. Available at: <http://corpus.rae.es/creanet.html>. Access on: April 13, 2018.

through repetition, the speaker in (3a) distinguishes prototypical coffee from any other substance that might resemble it. Reduplication is thus a pragmatic call to pin down the referent more accurately. In *I want coffee-coffee, not just a substitute*, the speaker is not satisfied with any accessible referent for coffee, as one would normally feel by simply uttering *I want coffee.* In this way, the speaker is looking for the referent that qualifies as real coffee. This is licensed by a metonymic cognitive operation, i.e. ANY ITEM (IN A CATEGORY) FOR THE BEST ITEM (OF THE CATEGORY). Consistent with the discussion in Schmid (2010: 120), we may note that some entities, in virtue of their nature, are better qualified to attract our attention, thus achieving ontological salience. This would be the case of prototypical entities which have a better attention-attracting potential than less exemplar entities in a category. This would explain why it would be cognitively incongruent to establish a metonymic mapping like ANY ITEM FOR THE WORST ITEM, since humans are attracted to exemplar items and features. In turn, reduplication with adjectives has an intensifying value. "Feo-feo" in (4b) means 'very/extremely/really ugly'. In this case, reduplication combines the intensifying value of *very* (*muy*) with the exemplar aspect of *really* (*realmente*), which is then scaled down through opposition with what the speaker equates to exemplar ugliness, i.e. 'scary-ugly'. When reduplication is applied to qualities, as is the case of (3b), we have an additional ICM type at work, i.e. a scalar one. Scalar ICMs have been described as "primary ICMs based on a system of ordered marks at fixed intervals that can be used as a reference standard in measurement" (RUIZ DE MENDOZA, 2013, p. 245). Scalar models arise from our experience with events, their frequency and probability, physical entities and their measurable properties in such domains as size, temperature, speed, quality, quantity, etc. Thus, in the LCM, the intensifying value of expressions like *feo-feo* arises from a double metonymic operation; a process that will be shown to be pervasive at other levels of analysis (e.g. Section 3.2). Following this rationale, we first apply the metonymy ANY ITEM IN A CATEGORY FOR THE BEST EXAMPLE OF THE CATEGORY, while, in a second metonymic step, the best example stands for the feature that makes it the best example. By focusing on such a feature, speakers endow the expression with an intensifying effect. Thus, *feo-feo* is first computed as 'prototypically ugly', that is, characterized by whatever features make the referent a paradigmatic case of ugliness. Highlighting such features has an associated intensifying effect which gives rise to a meaning implication similar (but not equal) to the one provided by the intensifying adverb *very* in *very ugly*.

As noted above, the LCM specifies the ways in which different conceptual patterns may interact to give rise to complex meaning representations. We have observed that amalgamation is a level-internal integration process. However, conceptual integration can occur across levels, in which case we talk about *subsumption* (RUIZ DE MENDOZA; MAIRAL, 2008). This process, which construction grammarians usually refer to as *fusion* (GOLDBERG, 1995), alludes to cases in which low-level structure merges into high-level structure, if there is conceptually compatibility between them. A case in point is the incorporation of verbal predicates into argument-structure

constructions, whose meaning pole makes use of high-level non-situational ICMs as a result of a process of abstraction over shared elements of several low-level configurations. For example, it is not difficult to see the origin of the caused-motion construction, whose semantics is schematically represented as 'X CAUSES Y TO MOVE Z' (e.g. *I pulled the boat out of the harbor*; COCA 1993). This pattern is but the result of abstracting common elements away from actions that can set other objects in motion thus causing them to change location (e.g. *push*, *kick*, *drag*, etc.). The generic elements of the caused-motion construction, that is, CAUSE and MOVE, are specified or parameterized (see RUIZ DE MENDOZA; GALERA, 2014, p. 94) through the integration of conceptually compatible low-level structure. When this happens, the schematic construction is realized through a lexically-filled construction (BARÐDAL *et al.*, 2011, p. 56). For example, the generic elements of the caused-motion pattern can be fleshed out by means of compatible low-level structure of the type *She moved the piano into the kitchen* (COCA 2004), *A woman entrepreneur? Come on. No way. They would have laughed you out the front door* (COCA 1995). In the first example, the semantic contribution of the construction is wholly redundant with the meaning of the verb (BENCINI; GOLDBERG, 2000, p. 642). This is not the case of the latter example. This sentence makes use of *laugh* in a causal-transitive sense that we do not normally assign to this inherently intransitive and non-causal verb (e.g. *I've never laughed so hard in my life*, COCA 2015), which can only take a complement that is governed by the preposition *at* (e.g. *People laughed at him*, COCA 2015). In 'laugh someone out', the caused-motion construction contributes meaning to the overall interpretation that cannot arise from the verb by itself. Construction grammarians argue that this extra non-lexical meaning, to which verbal meaning becomes adapted, arises from the more schematic construction. This type of lexical-constructional adaptation, which is referred to as *coercion*, requires the conceptual and syntactic structure of the verb to become subservient to constructional requirements of the same kind. *Laugh*, in the case under scrutiny, is not only required to take a causal meaning, but also to drop its canonical prepositional complement to take a non-oblique complement instead. As a development of this analysis, LCM theorists (see RUIZ DE MENDOZA; MAIRAL, 2007; GONZÁLVEZ-GARCÍA, 2011; PEÑA, 2015, etc.) have pointed out that coercion is not an unconstrained process. Thus, the predicate *laugh* can be subsumed into the caused-motion construction in virtue of an underlying licensing factor that enables its integration into the non-lexical configuration. In the LCM, metaphor and metonymy, which guide processes of re-construal, act as external licensing factors on lexical-constructional subsumption. As such, the use of *laugh* in a caused-motion environment is possible only if we metaphorically reinterpret the target-oriented activity of laughing at someone, which can lead to self-instigated motion of the person laughed at, as if it were a situation where such a person is caused to leave through forceful action, in a way comparable to the one for the following use of the contact-by-impact verb *kick*, which can act as a caused-motion verb: *They kicked him out the club* (COCA 2014). Thus,

understanding psychological or emotional impact (cf. 'laugh somebody out of Z') in terms of actual physical impact causing motion ('kick somebody out of Z') is achieved by means of the high-level metaphor AN EXPERIENTIAL ACTION IS AN EFFECTUAL ACTION (RUIZ DE MENDOZA; PÉREZ, 2011). In the LCM, grammatical metaphors of this kind have generic status because they involve non-situational generic conceptual structure (such notions as 'action', 'result', and 'cause'), which is definitional of the meaning pole of argument-structure constructions. Note that this grammatical metaphor also works by preventing the integration of other types of low-level propositional structure, even if semantically related (e.g. ?*He chortled him into the room*). That is, the metaphor requires experiential actions to be re-construed as actions that have a visible physical impact such that the affected object changes state or location. Unlike *laugh*, *chortle* contains a more salient manner component, i.e. a gleeful way of laughing, especially when amused or pleased. The friendly, joyful sense of *chortle* can hardly be conceived as having a strong negative psychological impact on people leading them to leaving a place in embarrassment.

3.2 IMPLICATIONAL CONSTRUCTIONS

When marked suprasegmental features (e.g. intonation) are applied to some lexical constructions like *hello* or *what*, such structures may receive an implicational reading. Take the example *Hello? Earth to Cecilia!* (COCA 1995). In this realization, prosodic features like shifted stress prominence on the second syllable (and subsequent vowel lengthening), together with others indicating the speaker's emotional reaction, act as a special signal (or cue) to the addressee as to the nature of the construction. That is, *Hello?* is not a mere call for attention but one where the speaker has an attitude about the addressee's apparent lack of attention, sometimes to specific aspects which appear to be evident to the speaker (cf. *Plus Yuki was too busy wanting to jump Shinya's bones because HELLO he is hot and saved her life*).[3] Since this construction has this conventionalized meaning associated with it, which exceeds the regular lexical and illocutionary value of the expression (i.e. an adverb expressing a greeting), we are faced with what the LCM labels an *implicational construction*, that is, a self-standing construction which attaches non-denotational, subjective meaning to argument-structure or lexical constructions (as in our example). The metonymic extension that has produced this added value, as will be shown throughout this section with other implicational structures, is based on a low-level situational ICM that generalizes over situations where people are ignored as they try to call other people's attention by greeting them. Thus, the use of *Hello?* with the suprasegmental features mentioned above involves an attempt to call the addressee's attention to whatever is going on or is evident in such a situation. Note that this implicational construction is highly self-contained, as opposed to most implicational constructions (e.g. *What's X Doing Y?*)

[3] Example extracted from Google: http://tenchithoughts.blogspot.com.es/2012/12/psycho-pass-episode-11.html. Accessed on: April 4, 2018.

which consist of fixed and variable elements. *Hello?* is fixed to such an extent that it has no real variables, at least not any linguistically-constrained variables. To clarify what is meant by this assertion, compare the variables in *What's X Doing Y?*: X is generally an NP with a low degree of complexity (cf. *#What's the gorgeous woman that came yesterday morning to our meeting at the Funfair club without previous warning doing in our garden?*) and Y is a PP; e.g. a realization like *What's the child doing when you wake up?* is not a good realization of the construction, while *What's the child doing in the kitchen?* is a felicitous example. In *Hello?*, the preceding and subsequent linguistic development is highly open-ended; the only constraint being that whatever is being said is not evident to the speaker. For this reason, *hello* in the utterance *Hello? Are you OK?*, which does not qualify as an example of the construction under discussion here, would have none of the suprasegmental features mentioned above for such a construction.

As is evident from the above explanation, *Hello?* codes special implicational meaning that gives rise to an implicational construction, i.e. one that stably associates with a given form meaning that has its origin in a situation-based meaning implication. When implicational meaning is not made part of a construction, it needs to be obtained inferentially. One central assumption of the LCM is that the two meaning-construction pathways, coding and inferencing, rely on the same cognitive mechanisms. Thus, at the implicational level, both pathways make use of low-level situational ICMs and premise-conclusion reasoning schemas grounded in metonymy.[4] For the sake of illustration, let us discuss the following examples:

(4) A: Have you been able to beat or overcome anxiety?
B: Meds and CBT are the only things that worked for me.[5]

(5) What's he doing out there in the rain? (COCA 2012).

The LCM claims that examples like (4) and (5) exploit non-generic situational scenarios, which in cognitive-linguistic terms are the equivalent of Schank and Abelson's (1997) *scripts*. These knowledge constructs, which result from the sequenced combination of several low-level propositional models, are further argued to be exploited metonymically by means of linguistic profiling (LANGACKER, 1987, 1999, 2008). As is well known, in Langacker's (2008) *Cognitive Grammar*, conceptual entities consist of a *profile* and a *base*. The profile of a concept is its inherent content, while the base is the conceptual structure against which the concept is profiled. For example, the profiled or designated entity 'cup' is understood against two different base domains in the following examples: *The cup was filled with coffee* and *The cup is on the table*. In the first case, we think of the cup as a container, while in the second example, we envisage the cup as standing on a surface. Thus, profile-base relationships provide different perspectives from which concepts can be construed. Given this, the linguistic

[4] Obviously, there are inferences that do not exploit situational CMs. This is the case, for example, of structures that require saturation or completion, as in *I'm ready (for the party/to go…)*.

[5] Example extracted from a thread available at: <http://www.essentialbaby.com.au/forums/index.php?/topic/1124037-how-did-you-overcome-your-anxiety/>. Access on: April 2, 2018.

realizations in (4) and (5) profile one or more elements of the scenario against which they are understood, namely, the 'having anxiety' and 'someone is doing something wrong' scenarios, respectively, each acting as the implicit conceptual base. Such scenarios, however, clearly differ in nature. Therefore, a finer-grained classification of low-level situational models than the one currently offered in the LCM is necessary. To account for the differences between (4) and (5), we argue for a distinction between *descriptive* low-level scenarios and *attitudinal* low-level scenarios. Whereas the former capture properties and relations among elements of a given scenario from an off-stage perspective, the latter include an emotional or otherwise subjective response to the state of affairs represented in a descriptive scenario from an on-stage perspective. Let us examine each of them through the examples above.

In the descriptive scenario in (4) the first conversational turn affords metonymic access to the whole low-level situational model of 'coping with anxiety', which contains such propositional models as feeling discomfort, going to the doctor, taking medication, choosing an appropriate therapy, and exercising. This is achieved via *domain expansion*, which, in the LCM, is a cognitive operation that consists in increasing the amount of conceptual material that we associate with a given concept (RUIZ DE MENDOZA; GALERA, 2014, p. 92). Once the whole descriptive scenario has been accessed, we focus our attention on the part of the scenario that is specifically relevant for an adequate interpretation of the answer. As such, B's response in (4) (*Meds and CBT are the only things that work for me*) exploits the converse operation, i.e. *domain reduction*, which is the process whereby part of a concept or proposition is given conceptual prominence. As a result, we zoom in on the fact that medication, together with a specific psychological treatment, are two possible ways that the addressee may like to try to overcome anxiety. This implication makes use of the following premise-conclusion reasoning schema:

> Premise (implicit assumption): Medication and psychological counseling are two combined ways of treating anxiety disorders.
>
> Explicit assumption: Medication and CBT worked for speaker B.
>
> Conclusion (implicated assumption): Speaker B has (probably) overcome anxiety via medication and CBT.

It goes without saying that a different answer would have profiled a different aspect of the same descriptive scenario, which would in turn have conveyed a different meaning implication (e.g. *Daily exercise, rescue remedy and having a plan*).[6] Note that other communicative exchanges may involve the activation of additional premise-conclusion schemas. This is the case of the example in (6), which we have constructed for illustration:

(6) A: Did you enjoy your vacation?
B: I will never buy this travel pack again.

[6] Example extracted from the URL given in footnote 6. Also accessed on April 2, 2018.

The implicature here is that speaker A did not enjoy his/her holidays because the travel pack chosen was not satisfactory. Such indirect interpretation arises from the following chained reasoning schemas:

Premise (implicit assumption): A good product is likely to be bought more than once.

Explicit assumption: Speaker B will never buy a given travel pack again.

Conclusion (implicated assumption): Speaker B thinks the travel pack was not a good product.

Premise (implicit assumption: A bad travel pack can spoil someone's vacation.

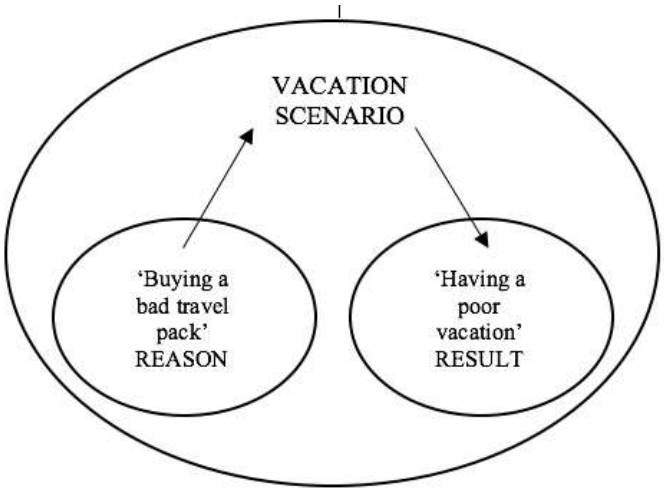
Previous implicated assumption: Speaker B thinks the travel pack was not a good product.

Conclusion (implicated assumption): Speaker B did not enjoy his/her vacation.

Here the two chained reasoning schemas specified above are supported by metonymy in two ways. On a local level, in both chained schemas, the explicit assumption first affords access to the implicit premise that is drawn from world knowledge. This is a domain-expansion metonymy. Then, there is a second metonymic-reduction operation that produces the implicated conclusion which results from selecting the part of the implicit premise that has not been mentioned explicitly. On a general level, there is another combined metonymic process that ranges over the two reasoning schemas on the basis of the implicated conclusions. At this level, the first and second conclusions are in a reason-result relationship that is mediated by the vacationing scenario. Through domain expansion buying a bad travel pack affords access to the vacationing scenario. Then, through domain reduction, one consequence of having bought a bad travel pack is highlighted, in this case, having a poor vacation. We represent expansion as "<" and reduction as ">": buying a bad travel pack < vacationing scenario > having a poor vacation.

This is schematically represented in Figure 1:

Figure 1: Domain expansion and reduction processes in (6).



Source: Figure 1 created by the authors

The LCM claims that such inferential chains underlie production and interpretation processes, although speakers will only resort to spelling them out fully if they find trouble trying to make meaning. In most situations, speakers work on analogy with similar responses, and the expected interpretation is accessed directly. In general, since we have entrenched access routes, inferential interpretation can be at least as fast as coded interpretation (cf. GIBBS, 2002), as is the case of example (5), which is a realization of an implicational construction.

What's he doing out there in the rain? differs from the conversational exchanges in (4) and (6) in that the underlying scenario that works as the conceptual base is attitudinal instead of descriptive. Additionally, while in (6) we may indirectly arrive at the implication that speaker B is bothered or irritated as a result of buying a travel pack that did not meet his/her needs, in (5) the subjective meaning implication that there is something wrong with the situation (i.e. being out there when it is raining) is now conventionally associated with the morpho-syntactic nature of *What's X Doing Y*?, and thus, such structure has constructional status. As previously noted, implicational constructions contain fixed and variable elements. While, as we have seen, the fixed part of argument-structure characterizations is generic (cf. cause, move, etc.), the fixed or non-parameterizable elements of implicational structures (e.g. *What's* and *doing* in *What's X Doing Y*), which co-occur with variable components (i.e. X and Y), are non-generic. Such non-variable elements contain sets of conditions that are stably realized by specific formal configurations of an idiomatic nature, such as *Do I look like I need help right now?* (COCA 2001), *Who do you think you are, a chemical engineer?* (COCA 2015), etc. In this way, implicational constructions use partially fixed versions of syntactic patters that would normally give rise to argument-structure constructions, to which they add extra meaning implications that often codify the speaker's emotional attitude to what is described at the propositional level. For example, despite the interrogative form of related expressions like *Who do you think you are?*, *Who are you to tell me what to do?* (COCA 2017), etc., these constructions are not used to ask a mere question (cf. *Hello?*). Instead, such idiomatic configurations convey the meaning that the speaker, who probably feels antagonized, is annoyed at the condescending attitude of the hearer and wants to undermine his/her assumed authority or power. Such a meaning does not arise compositionally from the sum of the constituent parts of the construction, but is attached to the form pole of the construction through frequent use in situations where it is evident that one of the speakers is assuming a position of superiority over the other speaker, or is felt to be doing so. Although this meaning is originally accessed through pragmatic implication, it has now become stably associated with the form of the construction by means of frequent use in situations where it is manifest that speaker and hearer should enjoy an equal status. As a result, this draws the addresses' attention away from the content and, on a subsequent level of interpretation, to the breaching of power relationships.

Let us now see how the notions of profile and base apply to implicational realizations such as the following:

(7) Who are you to tell me what to do? Who the hell are you to come here? (COCA 2017).

In the LCM, the construction *Who are you to X?* profiles the idea that the speaker is annoyed at the hearer assuming a position of superiority that enables him/her to say or act in a way that crosses what the speaker believes to be his/her limit of acceptance. This happens against the following base:

a. The speaker in (7) is aware that in this specific communicative situation the power relationship between him/her and the actor is or should be the same.

b. The speaker believes that such a power relationship is being breached by the hearer who has taken the liberty of crossing a boundary [profiled element].

c. The speaker believes that the hearer either shares assumption (b) or should share assumption (b) with him/her.

d. The addressee believes assumptions (a)-(c) to be the case.

Against this background of assumptions, the question *Who are you to X?* has the meaning implication that the speaker is bothered at his/her interlocutor's behavior. In the LCM, the interpretation of this construction hinges on a reasoning schema that involves the following chained inferences:

FOCUS ON PRELIMINARY EVENT

Premise 1 (implicit assumption): People do not ask for information that is evident.

Explicit assumption: The speaker asks about the referent's status, which is evident to both speaker and addressee.

Conclusion 1 (implicated assumption): The speaker is not asking about the referent's status but likely drawing attention to him assuming an authority/liberty that s/he does not have.

FOCUS ON THE RESULT

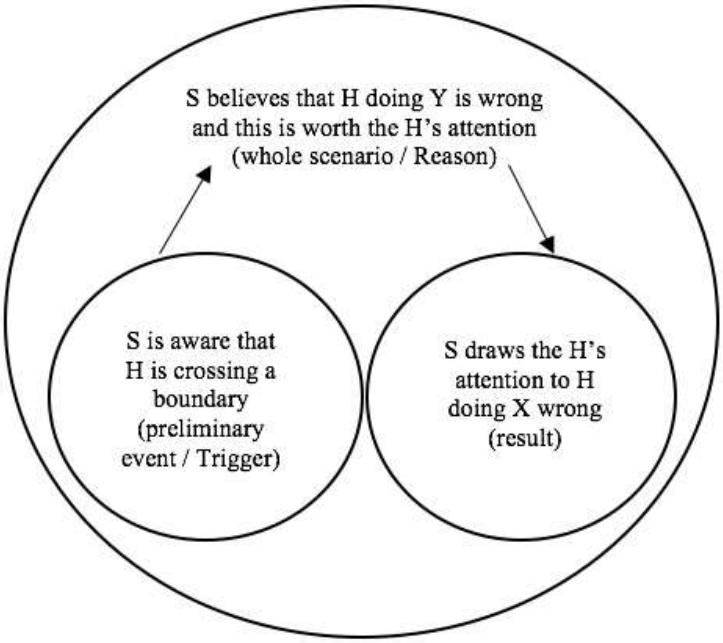
Premise 2 (implicit assumption): People draw attention to other people's behavior when they find it worth someone's attention.

Previous implicated assumption: The speaker is drawing the addressee's attention to the fact that he has assumed an authority/liberty that s/he does not have.

Conclusion 2 (implicated assumption): The speaker finds the referent's behavior worth the hearer's attention, thus activating a plausible scenario that will account for why the referent's behavior is worth the hearer's attention (e.g. the 'you are no authoritative enough to say/do X' scenario).

As with the realization in (6), such an inferential process has a metonymic grounding. More concretely, there is an underlying double metonymic pattern based on domain expansion followed by domain reduction. Such an operation is represented in Figure 2:

Figure 2: Metonymic expansion plus metonymic reduction in *Who are you to X?*



Source: Figure 2 created by the authors

Who are you to X? is thus taken to be an abstraction over a large amount of linguistic profiles of the 'someone is (believed to be) doing something wrong' scenario, such as *Who's been screwing with my inspirational slogans?* (COCA 2005), *Why's he acting like a retard?* (COCA 2001), *What do you think you are doing?* (COCA 2015), *Where the hell do you think you're going, missus?* (COCA 2014), *What on earth are you talking about, kid?* (COCA 2000), etc. Because these expressions regularly activate the scenario, they are entrenched or conventionalized constructions in which form and meaning are stably associated.

3.3 ILLOCUTIONARY CONSTRUCTIONS

Like implicational constructions, the LCM defines *illocutionary constructions* as self-standing constructions that contain both fixed and variable elements, as in *Can you X, please?* (e.g. *Can you open the window, please?*). Illocutionary constructions also originate in meaning implications, but such implications arise from reasoning about the subjectivized predication in terms of socio-cultural conventions. Additionally, notwithstanding the fact that implicational and illocutionary structures capture meaning that is grounded in the same kind of cognitive activity, these construction types differ as to the level of genericity of the situational ICM underlying them. Thus, unlike implicational characterizations, illocutionary constructions are grounded in high-level situational knowledge constructs that are the result of a process of abstraction over lower-level situational ICMs. For example, the speech act of requesting results from the schematization of shared conceptual material from specific low-level scenarios like

asking for a loan, begging in the streets, making explicit our need for someone to do something for us, etc. (BAICCHI; RUIZ DE MENDOZA, 2010).

The idea that illocutionary meaning is associated with the activation of high-level situational knowledge is not new. Within Cognitive Linguistics, Thornburg and Panther (1997) and Panther and Thornburg (1998) have argued for the existence of *illocutionary scenarios*, i.e. conceptual constructs of generic knowledge that are shared by the members of a given linguistic community which are stored in long-term memory. In their proposal, illocutionary scenarios consist of three components, namely, the 'before', 'core' and 'after'. Via the explicit activation of (one of) these components, speakers afford metonymic access to the whole scenario. For example, the utterance *Can you give me a hand with this?* (COCA, 2013) exploits the before element (i.e. Searle's (1969) preparatory condition) of the request scenario, i.e. the hearer has the capacity to carry out the action and the speaker wants the hearer to do it. This component functions as the source domain of a metonymy whose target is the entire speech act category of requesting. Suffice it to say that the more the components that are overtly realized, the easier it is to recognize the illocutionary force of a given utterance (e.g. *Pass the beans* (cf. core)*, will you?* (cf. after); COCA 2007). Although the scenario approach neatly captures relevant information regarding the conceptual make-up of speech acts, as well as the metonymic grounding of illocutionary meaning, subsequent work within Cognitive Linguistics has leveled some criticism at this theory. Thus, Pérez and Ruiz de Mendoza (2002, 2011), Ruiz de Mendoza and Baicchi (2007), Baicchi and Ruiz de Mendoza (2010), Del Campo (2013), Pérez (2013), Ruiz de Mendoza and Galera (2014), and Ruiz de Mendoza (2015), among others, contend that there is more to illocutionary activity than just metonymically activating relevant (parts of) illocutionary scenarios. For example, Pérez and Ruiz de Mendoza (2002), Ruiz de Mendoza and Baichhi (2007) and Pérez (2013) have demonstrated that pragmatic variables like power relationships between interlocutors and the degree of politeness and optionality conveyed by the utterance play an essential role in the speech act category of requesting. These are but additional high-level ICMs that work in conjunction in the codification of illocutionary meaning. A case in point is the activation of the capacity pre-condition by means of oblique modals, as in *Could you bring me a pillow?* (COCA 1998). While *could* increases the degree of politeness of the request, the incorporation of negative modals (e.g. *Can't you do me a favor for once in your life?*; COCA 2008) decreases the addressee's optionality to refuse to carry out the action. Similarly, a realization that exploits a mitigating device like a past time modal or the adverb *please* yields a better example of a request than one without it (e.g. *Can you hold for a moment, please?* (COCA 2006) vs. *Can you hold for a moment?*).

To solve these shortcomings, LCM theorists claim that illocutionary constructions are profiled against the base of a socio-cultural model called the *Cost-Benefit Idealized Cognitive Model* (see RUIZ DE MENDOZA; BAICCHI, 2007, pp. 111-112). The Cost-Benefit ICM contains stipulations that capture high-level situational meaning

at a more generic level than illocutionary scenarios. As previously noted, this ICM can interact with other variables such as power relationships, indirectness, degrees of optionality, etc. Next, consider the following examples:

(8) a. It is hot in here (COCA 2004).
b. I think Christopher is hurt (COCA 1998).
c. Can you please give me his cellular? (COCA 1997).
d. Do you think I could have a piece of your gum? (COCA 2003).
f. Will you give me a hand? (COCA 1994).

In (8ab) the speaker expresses a need and he/she wants the hearer to take care of such a need. The speaker does so through a non-conventionalized construction (see RUYTENBEEK, 2017). In (8cd), the speaker is asking about the ability of the addressee to supply his/her need. Finally, (8f) displays a situation in which the speaker appeals to the hearer's willingness to help. Whether these expressions have constructional status (i.e. are stable form-meaning associations like (8cdf)) or require different degrees of inferencing (e.g. (8ab)), they all share a common conceptual structure, i.e. the high-level scenario of requesting. Such a scenario is structured as follows:

- The speaker needs or desires something that s/he is either unable or unwilling to satisfy by him/herself.
- The speaker assumes that the addressee has the ability and willingness to satisfy his/her needs and/or desires.
- The speaker makes the hearer aware of his/her needs/desires, while being aware that the hearer may refuse to provide them.

The illocutionary expressions in (8) profile different aspects of the conceptual base in (9), which is part of the Cost-Benefit Model:

(9) a. If it is manifest to A that a particular state of affairs is not beneficial to B, and if A has the capacity to change that state of affairs, then A should do it.
b. If it is manifest to A that a potential state of affairs is not beneficial to B, then A is not expected to bring it about.

It should be emphasized that the stipulations of the Cost-Benefit Model, such as those in (9), cut across illocutionary categories. The social convention in (9b), for example, may also underlie the speech act category of ordering, as shown by the realization *Stop hitting me!* (COCA 1990). In turn, stipulation (9a) may also function as the base domain for both reprimands and apologies.

Let us now explore in more detail how the LCM would account for one specific example in terms of the inferential reasoning schema that the hearer follows to interpret the statement *I could use a cup of coffee* (COCA 2001) as a request. In this example, the speaker indirectly manifests his desire or need for a cup of coffee, thereby triggering the activation of the conventions in (9) which work as the base for requests. On decoding, the hearer interprets the statement as a request for him/her to give the speaker a cup of coffee on the grounds of the following premise-conclusion schema:

Premise (implicit assumption): the cultural convention (i.e. if a state of affairs is not beneficial to the speaker and the hearer can change it, then the hearer is expected to do so).

Explicit assumption: The speaker wants or needs a cup of coffee (i.e. there is a state of affairs that is non-beneficial to the speaker).

Conclusion (implicated assumption): The hearer is expected to satisfy the speaker's need or desire (thereby changing the state of affairs to the speaker's benefit, i.e. giving him/her a cup of coffee).

As with implicational representations, the metonymic process that underlies this reasoning pathway is as follows. A first step involves a process of domain expansion in which the statement *I could use some coffee* affords access to the whole convention according to which we are expected to take care of other people's needs and desires if it is within our capacity and willingness to do so. The convention stands, via metonymic reduction, for part of it, namely, the assumption that the hearer is expected to address the speaker's need/desire.

4 FINAL CONSIDERATIONS

Despite the large amount of work devoted to constructions within Cognitive Linguistics, there are some pending tasks that are central to the organization of the constructicon of a given language. One of such tasks is the distribution of constructions across levels of meaning representation. The present paper has argued in favor of an approach to this challenge along the lines of the LCM, which takes into account predicational (or argument-structure), implicational, illocutionary, and discourse levels of meaning construction. The associated meaning configurations have been discussed in detail here, while also accounting for the motivation behind them. Inferred representations at different levels of linguistic analysis have also been dealt with. Additionally, we have made emphasis on the type of ICMs underlying the semantic base of coded constructions and inferred representations, while also accounting for the cognitive operations working on such ICMs. In essence, argument-structure works on the basis of non-situational high-level meaning representations, while the implicational and illocutionary levels are situational. The difference between these latter two is that implicational meaning is obtained from low-level situational models, while illocutionary meaning is derived from high-level situational models. In any event, the reasoning processes used by speakers at these latter two levels are similar and result in meaning implications that, with frequent use, can become stably associated with the forms that generally afford access to them.

REFERENCES

BAICCHI, Annalisa; RUIZ DE MENDOZA, Francisco. The cognitive grounding of illocutionary constructions within the theoretical perspective of the lexical constructional Model. *Textus*. *english studies in Italy,* v. 23, n. 3, p. 543-563, 2010.

BARÐDAL, Jóhanna; KRISTOFFERSEN, Kristian E.; SVEEN, Andreas. West Scandinavian ditransitives as a family of constructions: with a special attention to the Norwegian 'V-REFL-NP' construction. *Linguistics,* v. 49, n. 1, p. 53-104, 2011.

BENCINI, Giulia M. L.; GOLDBERG, Adele E. The contribution of argument structure constructions to sentence meaning. *Journal of Memory and Language,* v. 43, p. 640-651, 2000.

BERGEN, Benjamin K.; CHANG, Nancy. Embodied construction grammar in simulation-based language understanding. In: ÖSTMAN, Jan-Ola; FRIED, Mirjam (Eds.). *Construction grammars:* cognitive grounding and theoretical extensions. Amsterdam/Philadelphia: John Benjamins, 2005. p. 147-190.

BOAS, Hans C. *A constructional approach to resultatives*. Stanford, CA: CSLI Publications, 2003.

BOAS, Hans C. The syntax-lexicon continuum in construction grammar: a case study of English communication verbs. *Belgian Journal of Linguistics,* v. 24, p. 54-82, 2010.

BOAS, Hans C. Cognitive Construction Grammar. In: HOFFMANN, Thomas; TROUSDALE, Graeme (Eds.). *The Oxford handbook of construction grammar*. Oxford: Oxford University Press, 2013, p. 233-254.

BUTLER, Christopher S.; GONZÁLVEZ-GARCÍA, Francisco. *Exploring functional-cognitive space*. Amsterdam/Philadelphia: John Benjamins, 2014.

CROFT, William. *Radical construction grammar:* syntactic theory in typological perspective. Oxford: Oxford University Press, 2001.

DEL CAMPO, Nuria. *Illocutionary constructions in English:* Cognitive Motivation and Linguistic Realization. Bern: Peter Lang, 2013.

FILLMORE, Charles. Frame semantics. In: Linguistics society of Korea (Ed.). *Linguistics in the morning calm.* Seoul: Hanshin, 1982, p. 111-138.

_____. Berkeley Construction grammar. In: HOFFMANN, Thomas; TROUSDALE, Graeme (Eds.). *The Oxford handbook of construction grammar*. Oxford: Oxford University Press, 2013. p. 111-132.

FILLMORE, Charles; KAY, Paul; O'CONNOR, Mary C. Regularity and idiomaticity in grammatical constructions: The case of let alone. *Language*, v. 64, p. 501-538, 1988.

GIBBS, Raymond. A new look at literal meaning in understanding what is said and implicated. *Journal of Pragmatics*, v. 34, p. 457-486, 2002.

GHOMESHI, Jila; JACKENDOFF, Ray; ROSEN, Nicole; RUSSEL, Kevin. Contrastive focus reduplication in English (The salad-salad paper). *Natural language & linguistic theory,* v. 22, p. 307-357, 2004.

GOLDBERG, Adele. *Constructions. a construction grammar approach to argument structure*. Chicago: University of Chicago Press, 1995.

_____. Constructions: a new theoretical approach to language. *Trends in Cognitive Sciences,* v. 7, n. 5, p. 219-224, 2003.

_____. *Constructions at work:* the nature of generalization in language. New York: Oxford University Press, 2006.

_____. Constructionist approaches. In: HOFFMANN, Thomas; TROUSDALE, Graeme (Eds.). *The Oxford handbook of construction grammar*. Oxford: Oxford University Press, 2013. p. 15-31.

GOLDBERG, Adele; JACKENDOFF, Ray J. The English resultative as a family of constructions. *Language,* v. 80, n. 3, p. 532-568, 2004.

GONZÁLVEZ-GARCÍA, Francisco. Metaphor and metonymy do not render coercion superfluous: Evidence from the subjective-transitive construction. *Linguistics,* v. 49, n. 6, p. 1305-1358, 2011.

HOFFMANN, Thomas. Construction grammars. In: DANCYGIER, Bárbara (Ed.). *The Cambridge handbook of cognitive linguistics*. Cambridge: Cambridge University Press, 2017. p. 310-329.

HOFFMANN, Thomas; TROUSDALE, Graeme (Eds.). *The Oxford handbook of construction grammar*. Oxford: Oxford University Press, 2013.

HOLTGRAVES, Thomas. Communication in context: effects of speaker status on the comprehension of indirect requests. *Journal of experimental psychology learning memory and cognition,* v. 20, n. 5, p. 1205-1218, 1994.

KAY, Paul; FILLMORE, Charles. Grammatical constructions and linguistic generalizations: the what's X doing Y? construction. *Language,* v. 75, n. 1, p. 1-33, 1999.

LAKOFF, George. *Women, fire, and dangerous things:* what categories reveal about the mind. Chicago: The University of Chicago Press, 1987.

LAKOFF, George; JOHNSON, Mark. *Metaphors we live by*. Chicago, IL: University of Chicago Press, 1980.

_____. *Philosophy in the flesh*. New York: Basic Books, 1999.

LANGACKER, Ronald W. *Foundations of cognitive grammar.* Vol. 1: theoretical prerequisites. Stanford, CA: Stanford University Press, 1987.

_____. *Grammar and conceptualization*. Berlin/New York: Mouton de Gruyter, 1999.

_____. *Cognitive grammar*: a basic introduction. New York: Oxford University Press, 2008.

PANTHER, Klaus-Uwe; THORNBURG, Linda L. A cognitive approach to inferencing in conversation. *Journal of pragmatics,* v. 30, p. 755-769, 1998.

PEÑA, Sandra M. A constructionist approach to causative frighten verbs. *Linguistics,* v. 53, n. 6, p. 1247-1302, 2015.

PÉREZ, Lorena. Illocutionary constructions: (multiple source)-in-target metonymies, illocutionary ICMs, and specification link. *Language & communication,* v. 33, n. 2, p. 128-149, 2013.

PÉREZ, Lorena; RUIZ DE MENDOZA, Francisco. Grounding, semantic motivation, and conceptual interaction in indirect directive speech acts. *Journal of pragmatics*, v. 34, n. 3, p. 259-284, 2002.

_____. A Lexical constructional model account of illocution. *Vigo international journal of applied linguistics,* v. 8, p. 99-138, 2011.

RUIZ DE MENDOZA, Francisco. Meaning construction, meaning interpretation, and formal expression in the lexical constructional Model. In NOLAN, Brian; DIEDRICHSEN, Elke (Eds.). *Linking constructions into functional linguistics:* The role of constructions in grammar. Amsterdam/Philadelphia: John Benjamins, 2013. p. 231-270.

_____. Entrenching inferences in implicational and illocutionary constructions. *Journal of social sciences,* v. 11, n. 3, p. 258-274, 2015.

_____. Metaphor and other cognitive operations in interaction: form basicity to complexity. In HAMPE, Beate (Ed.). *Metaphor. embodied cognition and discourse*. Cambridge: Cambridge University Press, 2017. p. 138-159.

RUIZ DE MENDOZA, Francisco; BAICCHI, Annalisa. Illocutionary constructions: Cognitive motivation and linguistic realization. In: KECSKES, Istvan; HORN, Laurence (Eds.). *Explorations in pragmatics:* Linguistic, cognitive, and intercultural aspects. Berlin: Mouton de Gruyter, 2007. p. 95-128.

RUIZ DE MENDOZA, Francisco; GALERA, Alicia. *Cognitive modeling:* a linguistic perspective. Amsterdam/Philadelphia: John Benjamins, 2014.

RUIZ DE MENDOZA, Francisco; LUZONDO, Alba. Constructions across three levels of meaning representation. In: HERNÁNDEZ CAMPOY, Juan M.; MANCHÓN RUIZ, Rosa M.; CUTILLAS ESPINOSA, Juan A.; MENA MARTÍNEZ, Florentina (Eds.). *Estudios de filología inglesa:* Homenaje al profesor Rafael Monroy. Murcia: EditUM, 2017. p. 555-578.

RUIZ DE MENDOZA, Francisco; MAIRAL, Ricardo. High-level metaphor and metonymy in meaning construction. In: RADDEN, Günter; KÖPCKE, Klaus-Michael; BERG, Thomas; SIEMUND, Peter (Eds.). *Aspects of meaning construction*. Amsterdam/Philadelphia: John Benjamins, 2007. p. 33-49.

_____. Levels of description and constraining factors in meaning construction: An introduction to the Lexical Constructional Model. *Folia linguistica,* v. 42, n. 2, p. 355-400, 2008.

RUIZ DE MENDOZA, Francisco; PÉREZ, Lorena. The contemporary theory of metaphor: myths, developments and challenges. *Metaphor and symbol*, v. 26, p. 161-185, 2011.

RUYTENBEEK, Nicolas. The comprehension of indirect requests: previous work and future directions. In: DEPRAETERE, Ilse; SALKIE, Raphael (Eds.). *Semantics and pragmatics:* Drawing a line. Amsterdam: Springer, 2017. p. 293-322.

SAG, Ivan; BOAS, Hans C.; KAY, Paul (Eds.). *Signed-based construction grammar.* Stanfrod: CSLI Publications, 2012.

SCHANK, Roger, C.; ABELSON, Robert*. Scripts, plans, goals, and understanding.* Hillsdale NJ: Lawrence Earlbaum, 1977.

SCHMID, Hans-Jörg. Entrenchment, salience, and basic levels. In: GEERAERTS, Dirk; CUYCKENS, Hubert (Eds.). *The Oxford handbook of cognitive linguistics*. Oxford: Oxford University Press, 2010. p. 117-138.

SEARLE, John. *Speech acts:* An essay in the philosophy of language. Cambridge: Cambridge University Press, 1969.

STEELS, Luc. Design methods for fluid construction grammar. In: STEELS, Luc (Ed.). *Computational issues in Fluid Construction Grammar*. Springer Verlag: Berlin, 2012. p. 3-36.

STEFANOWITSCH, Anatol. A construction-based approach to indirect speech acts. In: PANTHER, Klaus-Uwe; THORNBURG, Linda (Eds.). *Metonymy and pragmatic inferencing*. Amsterdam/Philadelphia: John Benjamins, 2003. p. 105-26.

THORNBURG, Linda; PANTHER, Klaus-Uwe. Speech act metonymies. In: LIEBERT, Wolf-Andreas; REDEKER, Gisela; WAUGH, Linda (Eds.). *Discourse and perspective in cognitive linguistics*. Amsterdam/Philadelphia: John Benjamins, 1997. p. 205-219.

VAN TRIJP, Remi. A design pattern for argument-structure constructions. In: STEELS, Luc (Ed.). *Design patterns in fluid construction grammar*. Amsterdam/Philadelphia: John Benjamins, 2011. p. 115-145.