

Lexical templates for the Spanish verbs of feeling: A further elaboration of RRG logical structures¹

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1. Introduction

The study of the lexico-semantic properties of verbs and their relation with syntax has long been common ground for projectionist and constructionist theories. Neither, however, has been able to provide a thorough explanation of the nature of lexicon, grammar and their relationship.

From our point of view, projectionist theories like Role and Reference Grammar (RRG; Van Valin & LaPolla 1997; Van Valin 2005),² offer an insufficient description of lexical meaning. On the other hand, construction-based approaches, like Construction Grammar (CxG; Goldberg 1995, 2002, 2006), focus mainly on the representation of constructions, sometimes overlooking the kind of constraints that explain how and why constructions interact with specific verbal predicates (Ruiz de Mendoza & Mairal 2007a: 27). In this paper the Lexical Constructional Model (Mairal & Van Valin 2001; Mairal & Faber 2002, 2007; Mairal & Ruiz

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²Abbreviations employed in this article: ACC 'accusative', COL 'colloquial', CXG 'Construction Grammar', FLM 'the Functional Lexematic Model', FML 'formal', INFML 'informal', LS 'logical structure', LT 'lexical template', MTT 'Meaning and Text Theory', NSM 'Natural Semantic Metalanguage', LCM 'the Lexical Constructional Model', RRG 'Role and Reference Grammar', sb 'somebody'.

de Mendoza 2006; Ruiz de Mendoza & Mairal 2007a, 2007b) and its notion of lexical template will be presented as the meeting point for both paradigms. The elaboration of these templates will be exemplified with a sub-domain of verbs of 'feeling': the Spanish verbs of *anger*.

The organization of the paper is as follows: section 1 introduces the theoretical premises of the Lexical Constructional Model. In section 2, the lexical templates themselves will be presented, focusing on the syntactic (2.2.1), the lexico-semantic (2.2.2) and the pragmatic features (2.2.3) they codify. Finally, the conclusion will be provided in section 3.

2. The LCM and the paradigmatic organization of the Spanish *anger* verbs

2.1. *A brief outline of the Lexical Constructional Model*

The Lexical Constructional Model (henceforth LCM) is a proposal for lexical representation and the relationship between syntax and all facets of meaning construction, including traditional implicature and illocutionary meaning. It is being developed within the framework of RRG, but shows full compatibility with other functional and/or cognitive approaches to language, such as CxG. Below is a graphic illustration of the model (Mairal & Faber 2007: 139):

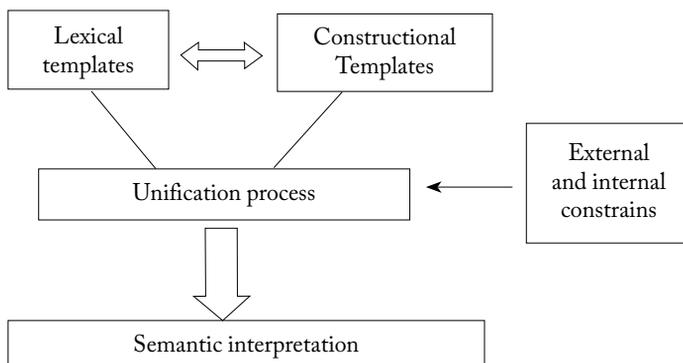


Figure 1. The Lexical Constructional Model

The LCM takes for granted that (i) constructions are vital to account for the cases of multiple argument realization, and that (ii) the unification of the argument structure of a verb and a construction should be ruled in the grammar by means of a number of external and internal constraints. Semantic interpretation is then arrived at by the unification of the lexical template of the predicate under analysis and the constructional template in which it appears. This paper focuses on the former, i.e. the content and relevance of Spanish lexical templates within the LCM, leaving the latter for further research. This paper focuses on the former, i.e. the content and relevance of Spanish lexical templates within the LCM, leaving the latter for further research. The interested reader is referred to the work carried out by Ruiz de Mendoza and Mairal mentioned in the References section below, as well as the papers included on the website of the LEXICOM project.³

2.2. *The paradigmatic organization of the Spanish verbs of 'anger'*

One of the landmarks of the LCM is its strong semantic concern, giving much more emphasis to the lexico-semantic properties of verbs than RRG or CxG. This is due to the fact that the LCM stems from the Functional Lexematic Model (henceforth FLM; cf. Martín Mingorance 1998; Faber & Mairal 1999), which has also been partially integrated into the new model. By using the main tenets of Dik's Functional Grammar (1997a, 1997b) and Coseriu's Lexematic Theory (1981), the FLM organized both the English and the Spanish verbal lexicons paradigmatically and syntagmatically into a series of coherent semantic classes or lexical domains such as: EXISTENCE, CHANGE, POSSESSION, SPEECH, EMOTION, ACTION, COGNITION, MOVEMENT, PHYSICAL PERCEPTION and MANIPULATION.

Each of these lexical domains is obtained by means of a process of exhaustive semantic factorization, working upwards from various dictionary entries of the possible predicates belonging in each class (Faber & Mairal 1999: 83-101). Thus, the dictionary definitions are broken down into two meaning components for each verb:

- (1) a. The nuclear meaning
- b. The adverbial modification

³For an updated account of the LCM, we refer the interested reader to the LEXICOM research webpage: <http://www.lexicom.es/>.

The nuclear meaning (*genus, definiens* or structural component in other approaches) is the generic or superordinate item in which all term members of the lexical class are directly or indirectly defined. The adverbial modification (*differentia* or idiosyncratic component for other theories) is indicative of the semantic, pragmatic and/or register parameters that help to distinguish the verbs from each other within the same class. Following this type of semantic factorization, the sub-domain of verbs expressing *anger* in Spanish is organized as follows:⁴

CAUSAR ENFADO
(‘TO CAUSE ANGER’)

1. *Enfadar*: causar en alguien un estado de enfado
(‘anger: cause in sb a state of anger’)
 - 1.1. *Enojar*: enfadar a alguien, causándole enojo (formal)
(‘anger: anger to-ACC sb, causing-him/her anger’)
 - 1.2. *Enfurrñar*: enfadar a alguien suavemente o por mimo (informal)
(‘cause sb to sulk: anger to-ACC sb gently or because of too much care’)
 - 1.3. *Molestar*: enfadar a alguien ligeramente, causándole inquietud del ánimo
(‘annoy: anger to-ACC sb a little, causing-him/her to be restless’)
 - 1.3.1 *Pinchar*: molestar a alguien repetidamente con la intención de que se enfade
(‘needle: annoy to-ACC sb repeatedly so that s/he gets angry’)
 - 1.3.2 *Incomodar*: molestar a alguien, causándole incomodidad
(‘bother: annoy to-ACC sb, causing-him/her to feel uncomfortable’)
- 1.4. *Disgustar*: enfadar a alguien, causándole disgusto o pesadumbre
(‘upset /displease: anger to-ACC sb, causing-him/her annoyance or sorrow’)
 - 1.4.1 *Contrariar*: disgustar a alguien, causándole contrariedad o dificultades
(‘vex: upset to-ACC sb, causing-him/her vexation or difficulty’)
 - 1.4.2 *Desazonar*: disgustar a alguien, causándole desazón
(‘disturb: upset to-ACC sb, causing-him/her uneasiness’)
- 1.5. *Enemistar*: enfadar a alguien, haciendo que deje de ser su amigo
(‘antagonize: anger to-ACC sb, causing their friendship to break off’)

⁴Since we want to maintain the lexico-semantic and pragmatic parameters that define this Spanish sub-domain, the glosses translate each definition into English more or less literally in Table 1 as well as in the examples used. If the equivalent English verbs were provided, those parameters would be lost.

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- 1.6. *Fastidiar*: enfadar a alguien, causándole fastidio o hastío
(‘irk: anger to-ACC sb, causing-him/her nuisance or disgust’)
- 1.6.1 *Reventar*: fastidiar mucho a alguien con la intención de que se enfade
(coloquial)
(‘rile: irk a lot to-ACC sb, so that s/he gets angry’)
- 1.7. *Ofenderse*: enfadarse por sentirse insultado o despreciado
(‘take offense: get angry because one feels insulted or despised’)
- 1.8. *Mosquear*: enfadar a alguien repentinamente y por poco tiempo (coloquial)
(‘bug: anger to-ACC sb suddenly and for a short time’)
- 1.9. *Cabrear*: enfadar a alguien, causándole cabreo (coloquial)
(‘piss off: anger to-ACC sb, causing-him/her to be pissed off’)
- 1.10. *Descomponer*: enfadar a alguien, haciéndole perder la serenidad
(‘disturb: anger to-ACC sb, making-him/her lose their composure’)
- 1.11. *Enrabetar/enrabiarse*: enfadar mucho a alguien por motivo leve y durante poco tiempo (‘nettle: anger a lot to-ACC sb for no reason and for a short time’)
- 1.12. *Irritar*: enfadar a alguien, haciéndole sentir ira
(‘irritate: anger to-ACC sb, making-him/her feel irritated’)
- 1.12.1 *Provocar*: irritar a alguien con palabras u obras para que se enfade
(‘provoke: irritate to-ACC sb with words or deeds so that s/he gets angry’)
- 1.13. *Exasperar*: enfadar mucho a alguien, haciéndole perder la paciencia y el aguante
(‘exasperate: anger a lot to-ACC sb, making-him/her become impatient’)
- 1.14. *Indignar*: enfadar mucho a alguien, causándole indignación
(‘incense: anger a lot to-ACC sb, causing-him/her indignation’)
- 1.14.1 *Escandalizarse*: indignarse, mostrándose horrorizado
(‘get outraged: get incensed, looking shocked’)
- 1.15. *Enfurecer*: enfadar a alguien intensamente, provocándole furia
(‘infuriate: anger to-ACC sb intensely, causing-him/her fury’)
- 1.15.1 *Sulfurar*: enfurecer mucho (coloquial)
(‘infuriate very much’)
- 1.16. *Encolerizar*: enfadar a alguien intensamente, poniéndole colérico
(‘enrage: anger to-ACC sb intensely, causing-him/her to be choleric’)
- 1.16.1 *Encorajinar*: encolerizar a alguien, provocándole rabia
(‘enrage to-ACC sb, causing-him/her to be in a rage’)
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Table 1. Paradigmatic organization of the Spanish *anger*-verbs

Hyponymy is the semantic relationship that percolates down through the verb class of Table 1 above. The nuclear meaning of the sub-domain is lexicalized in *enfadar* ‘anger’, since all the verbs are its direct or indirect hyponyms. On the other hand, parameters such as manner, instrument, purpose, reason, time, degree and register encode a different type of specification of the more generic term *enfadar* ‘anger’, resulting in the rest of hyponyms. For example, (1.3) *molestar* ‘annoy’ gives content to degree *-ligeramente*, ‘a little’-, whereas (1.3.1) *pinchar* ‘needle’ instantiates manner *-repetidamente* ‘repeatedly’- and purpose *-con la intención de que se enfade* ‘so that someone gets angry’. It is precisely this idiosyncratic component that we employ to distinguish each of the verbs that belongs to this class, constituting the basis for the internal variables of the lexical templates analyzed in section 2.2.2.

3. Lexical templates for the Spanish verbs of anger

3.1. *Lexical templates: a further elaboration of RRG logical structures*

The term lexical template (henceforth LT) is used here to refer to the formalized construct that functions as a metaentry, containing the core meaning and the syntactic information relevant for the verbs of a lexical class or sub-domain.

The RRG logical structures (LSs) are the starting point of the LTs developed by the LCM. However, whereas LSs only capture those features that have a direct role in the mapping into syntax, the LCM incorporates an enriched semantic component by using all world-knowledge elements previously identified by the FLM; as a result, a complete domain of verbs is certainly defined (cf. Table 1). As this new semantic component includes relevant aspects of word meaning, LTs become methodologically closer to CxG semantic frames (Mairal & Faber 2007: 141). Furthermore, since LCM templates are set out to be universally and typologically valid -unlike frames-, they employ a metalanguage based on semantic primitives, lexical functions and *Aktionsart* distinctions. With this in mind, LCM templates are made up of the following modules or components:

- (2) <pragmatic information> [semantic representation] + [syntactic representation]

The syntactic component, on the one hand, is realized by means of the LSs proposed in RRG and the predicate classes identified there: states, activities, achieve-

ments, semelfactives, accomplishments, active accomplishments, and their corresponding causative versions (Van Valin 2005: 45). The semantic component, on the other hand, is encoded by means of semantic primitives and lexical functions. The former correspond to the superordinate verbal predicates previously identified by the FLM through extensive factorization of meaning definitions in each lexical domain:

LEXICAL DOMAIN	NUCLEAR TERM
existence	be / happen/ exist
change	become
possession	have
speech	say
emotion	feel / anger / fear
action	do, make
cognition	know, think
movement	move (go / come)
physical perception	see / hear / taste / smell / touch
manipulation	use

Table 2. FLM lexical domains and nuclear terms
(adapted from Mairal & Faber 2007: 144)

Interestingly enough, the FLM nuclear terms coincide, to a great extent, with Wierzbicka's inventory of primitives identified in the Natural Semantic Metalanguage framework (NSM; Wierzbicka 1996, 1999; Goddard y Wierzbicka 2002, 2005, 2007), which has been shown to be valid for over a hundred languages. The semantic primitives identified so far in the NSM are presented in Table 3 (in next page).

It is worth mentioning that all predicates used in the syntactic module of the LCM templates, unlike the 'canonical' RRG LSs, have been taken from the FLM's inventory of nuclear terms (cf. Table 2) or from the NSM's list of semantic primes above. Besides, since primes are language-neutral in the NSM, Spanish predicates have been employed in the elaboration of the LTs for the Spanish verbs of *anger*. For the NSM theory, "any natural language is adequate as its own semantic metalanguage" (Goddard 2002: 5). Thus, the hypothesis is that the set of irreducible semantic primes identified for English must have exponents not only in Spanish, as illustrated in Table 3, but in almost all the languages one sets up to study. It

GRAMMATICAL CATEGORY	NSM SEMANTIC PRIMES	SPANISH EXPONENTS
Substantives	I, YOU, SOMEONE/PERSON, PEOPLE, SOMETHING/THING, BODY	YO, TÚ, ALGUIEN/PERSONA, GENTE, ALGO/COSA, CUERPO
Determiners	THIS, THE SAME, OTHER/ ELSE	ESTO, LO MISMO, OTRO
Quantifiers	ONE, TWO, SOME, ALL, MANY/ MUCH	UNO, DOS, ALGUNOS, TODO, MUCHO
Evaluators	GOOD, BAD	BUENO, MALO
Descriptors	BIG, SMALL	GRANDE, PEQUEÑO
Augmentor, intensifier	VERY, MORE	MUY, MÁS
Mental predicates	THINK, KNOW, WANT, FEEL, SEE, HEAR	PENSAR, SABER, QUERER, SENTIR, VER, OÍR
Speech	SAY, WORDS, TRUE	DECIR, PALABRAS, VERDAD
Actions, events, movement, contact	DO, HAPPEN, MOVE, TOUCH	HACER, PASAR, MOVERSE, TOCAR
Location, existence, possession, specification	BE (SOMEWHERE), THERE IS/EXIST, HAVE, BE	ESTAR, HAY, TENER, SER
Life and death	LIVE, DIE	VIVIR, MORIR
Time	WHEN/TIME, NOW, BEFORE, AFTER, A LONG TIME, A SHORT TIME, FOR SOME TIME, MOMENT	CUÁNDO/TIEMPO, AHORA, ANTES, DESPUÉS, MUCHO TIEMPO, POCO TIEMPO, POR UN TIEMPO, MOMENTO
Space	WHERE/PLACE, HERE, ABOVE, BELOW; FAR, NEAR; SIDE, INSIDE	DÓNDE/SITIO, AQUÍ, ARRIBA, DEBAJO; CERCA, LEJOS; LADO, DENTRO
“Logical” concepts	NOT, MAYBE, CAN, BECAUSE, IF	NO, TAL VEZ, PODER, PORQUE, SI
Relational substantives	KIND, PART	TIPO, PARTE
Similarity	LIKE	COMO

Table 3. NSM semantic primes (Goddard & Wierzbicka 2005)

does not mean, however, that semantic primes are expressed identically in all the world's languages: exponents of primes may be single words, phrasemes or bound morphemes, depending on the language under consideration. They may even have different morphosyntactic properties and belong to different word-classes, as long as the prime conveys the same requisite meaning in each language (Goddard & Wierzbicka 2007: 800). The numerous NSM studies (cf. Goddard & Wierzbicka 2002) carried out in languages as different as Polish, Lao, Russian, or French, to name just a few, provide sufficient evidence that a language-neutral metalanguage is a valid tool to account for the lexico-semantic properties of predicates in maximum detail.

In the LCM, this core of semantic primitives is in turn combined with the operators or lexical functions proposed by Mel'cuk (1989) and his colleagues (Alonso Ramos 2002) in *Meaning and Text Theory (MTT)* to explain the lexical collocations of a language:

- (3) a. Magn (easy) = *as pie, as a piece of cake* (Mel'cuk 1989: 75)
 b. Magn (contrast) = *sharp; vivid*

In MTT, English collocations such as those of (3) are captured by means of the application of the lexical function “Magn”, which expresses intensification, to its arguments *-easy* or *contrast-*, which yields a high set of values, namely, the same collocations *-as pie* or *sharp*. In the LCM, however, these lexical functions are employed paradigmatically to combine semantic primes and so differentiate one predicate from others within the same domain. Besides, new functions have been added in order to account for the characteristics of the verbs under analysis, as illustrated in Table 4. Hence, within the LCM framework, the MTT lexical functions have been renamed as *semantic functions*.

SEMANTIC FUNCTION	DEFINITION
MTT LEXICAL FUNCTIONS (WITH THEIR APPLICATION ADAPTED TO PARADIGMATIC STRUCTURE)	
ANTI	Antonym/negation
CAUS	Cause
CONT	Continuity/duration

CULM	The highest point
INSTR	Instrument
INVOLV	Sub-activities implied by the predicate
MAGN	Intense(ly), very [intensifier], to a very high degree
MINUS	Less
PLUS	More
SYMPT	Physical symptoms
ADDITIONAL LCM SEMANTIC FUNCTIONS	DEFINITION
MANNER	Manner
RESULT	The sub-activity is a direct, non-cancellable, result of the main predicate
PURP	Purpose
MANIF	Showing in appearance
BECAUSE	Reason

Table 4. MTT & LCM functions used in the Spanish sub-domain of *anger*-verbs

3.2. *The elaboration of lexical templates for the Spanish verbs of anger*

As observed in Table 1, the Spanish sub-domain of *anger* verbs groups twenty-six predicates, each of which lexicalizes the way in which *anger* is conceptualized. Then, it is crucial to find out a robust means of lexico-semantic representation that allows us to capture all the pragmatic, semantic and syntactic subtleties of this rich subclass. However, to the best of our knowledge, no such representations have been provided.

Most of the literature on psychological verbs has been concerned with the inverse linking of the arguments of these predicates or with their different aspectual structure (Belletti & Rizzi 1987; Grimshaw 1990; Pesetsky 1990; Pustejovsky 1992). Therefore, the lexical representations proposed by these studies only contain syntactically relevant information (cf. Jiménez Briones 2004: 124).

In functional theories like RRG, the lexico-semantic representations for feeling predicates do not add much to the picture, since their LSs, among other shortcomings, reveal an undesirable circularity in the use of their “alleged” primitives:

- (4) a. *Mary surprised Sally*: [**do'** (Mary, \emptyset)] CAUSE [INGR **surprised'** (Sally)]
(Van Valin & LaPolla 1997: 290)
- b. *love*: **love'** (x, y) (Van Valin 2005: 55)
- c. *The dog scared the boy*: [**do'** (dog, \emptyset)] CAUSE [**feel'** (boy, [**afraid'**])] (Van Valin 2005: 47)

Unlike the theories above, the LCM conceives verbal meaning as an enhanced representation made up of a pragmatic, a semantic and a syntactic component which makes use of a metalanguage based on an inventory of primes, semantic functions and *Aktionsart* distinctions: the lexical template. This format reduces circularity and gives templates a typological dimension that is impossible with language-specific representations.

The specific LCM templates for the definitions previously introduced in Table 1 are presented in great detail in the next three sub-sections. As a generalization to all LCM templates, the reader must bear in mind that two types of variables are employed to differentiate the syntactic and the semantic modules that make up each template: internal variables and external variables. The former are signaled with Arabic numerals (1, 2, 3) and appear as subscripts of the semantic functions they are arguments of, whereas the latter are marked in Roman letters (*x*, *y*, *z*) and will always be mapped into syntax. The default linking between external and internal variables is $x = 1$, $y = 2$, and $z = 3$, although it can be specified if necessary. Let us now analyze the particular features of the syntactic, semantic and pragmatic components of the lexical templates for the Spanish verbs of *anger*.

3.2.1. The syntactic module

The syntactic component of the verbs under study is a causative accomplishment LS, which codifies two sub-events: the first sub-event carried out by *x* ([**do'** (*x*, \emptyset)] causes the second sub-event or the change of state of anger in *y* (CAUSE [BECOME **feel'** (*y*, [**anger'**]))):

- (5) [[**do'** (*x*, \emptyset)] CAUSE [BECOME **sentir'** (*y*, [**enfado'**]]]

As detailed in section 3.1, the syntactic module of LCM templates, unlike LSs, employs predicates drawn from the FLM's inventory of nuclear terms (cf. Table 2) or from the NSM's list of semantic primes (cf. Table 3). Furthermore, since each language is described on its own in the NSM, without imposing the categories of the linguist's native language, usually English, Spanish predicates have been used in the LTs of the Spanish verbs of *anger*. On the grounds of typological analysis, the LCM is thus able to solve the two major drawbacks of RRG structures: the delimitation of the decompositional chains and the usage of English as the only language of lexical representation (Ruiz de Mendoza & Mairal 2007a: 30; Ruiz de Mendoza & Mairal, 2007b).

The RRG LS of (5) is inherited by all the hyponyms of *enfadar* 'anger', so it is not included again in the LTs, unless specified differently, like in (1.7) *ofenderse* 'take offense' and (1.14.1) *escandalizarse* 'get outraged', which exhibit the following LS:

- (6) [BECOME sentir' (x, [enfado'])]

The Spanish predicate *ofenderse* 'take offense' and *escandalizarse* 'get outraged' are semantically related to the feeling of anger when used as accomplishments only. According to the Spanish dictionaries consulted for this study, the causative accomplishments related to these verbs, that is, *ofender* 'cause offense' and *escandalizar* 'outrage', are closer to causing someone to lose respect and to causing a shock, respectively, rather than to causing anger. Therefore, they are included in this sub-domain with their accomplishment LS, instead of the 'canonical' LS in (5).

Neither does the Spanish predicate (1.5) *enemistar* 'antagonize' fully inherit the causative accomplishment LS of (5), as presented below:

- (7) [(do' (x, ∅)) CAUSE [BECOME sentir' (y, [enfado' (z))]]

Although the LS in (7) is also a causative accomplishment, there is a third external variable not present in the other LSs: *z*. This is due to the fact that *enemistar* 'antagonize' is a reciprocal verb that implies the existence of at least two participants that get angry with each other (8b), as the anomaly of (8c) and (8c') makes explicit:⁵

⁵ We are aware that reciprocal verbs are represented differently in RRG (cf. Van Valin

- (8) a. *Tus palabras enemistaron a mis amigos*
 your words antagonized to_{ACC} my friends
 'Your words antagonized my friends.'
- b. *Your words caused my friends to get angry with each other*
- b'. [**do**' (your words, \emptyset)] CAUSE [BECOME **feel**' (my friends, [**anger**' (my friends))]
- c. *#Your words caused my friends to get angry*
- c'. [**do**' (your words, \emptyset)] CAUSE [BECOME **feel**' (my friends, [**anger**' (?))]

3.2.2. The semantic module

The syntactic component is in turn modified by the appropriate semantic functions in the semantic module, as well as by the pragmatic properties of each verb in the pragmatic component; in other words, these idiosyncratic semantic and pragmatic features that the FLM framework captures as adverbial modification.

In the case of the prototypical term *enfadar* 'anger', since the feeling of anger is considered a primitive within the domain of emotions (Wierzbicka 1999: 36), along with FEAR-LIKE, SHAME-LIKE, LOVE-LIKE, SMILE, CRY, HUNGER, THIRST, and PAIN, the corresponding LT coincides with the LS in RRG terms (cf. (5)). Other less prototypical verbs, however, need to capture how the change of state is brought about, which is neatly done in the semantic part of the template by means of the combination of a number of semantic functions and their appropriate arguments.

LCM semantic functions are understood based on the MTT definitions, i.e. as logical or mathematical operations on arguments or features which yield a value (cf. (3)). In the LCM, the value corresponds to the definition of the verb under study, being our aim to find out which combination of functions and features is responsible for that value.

As far as functions are concerned, their nature will determine the number of arguments they select. Hence, unary functions like MINUS, ANTI, CULM, MAGN, CONT,

2005: 165). However, since a thorough account of reciprocals would lie beyond the scope of this study, rough LSs are sufficient to represent the meanings of (8b) and (8c).

and PLUS in Table 4, require one argument only; binary functions like MANNER, RESULT, SYMPT, BECAUSE, PURP, INSTR, and MANIF select two arguments. Arguments may appear as subscripts of the function that operates on them and/or at the same level of the function they are related to. For instance, in the semantic module of (1.3) *molestar* ‘annoy’, a unary function and two binary functions are present. This is illustrated in (9).

- (9) a. (1.3) **Molestar**: *enfadar a alguien ligeramente, causándole inquietud del ánimo*
 (‘annoy: anger to-ACC sb a little, causing-him/her to be restless’)
- b. [MINUS_{enfadar} & RESULT₂SYMPT₂inquietud] [[[do’ (x, ∅)] CAUSE [BECOME sentir’ (y, [enfado’])]]]

In this representation, MINUS is a unary function that expresses less of something, so it takes scope over one argument only: the hypernym *enfadar* ‘anger’. RESULT, on the other hand, is a binary function –i.e. something results in someone/something or because of someone/something else–, so in (9b) the subscript 2 is interpreted as one of its arguments and what comes afterwards –SYMPT₂inquietud– as its second argument. Likewise, SYMPT is a binary function –someone develops the symptoms of a physical or mental illness– that operates on two arguments: the subscript 2 and the symptom or feeling of *inquietud* ‘restlessness’. Since these subscripts are the internal variables which, by default, are bound to the second participant of the event, the complete lexical template of (9b) indicates that in *molestar* ‘annoy’ the first participant *x* does something that causes in the second participant *y* to become less angry, with the result in *y* of a symptom of restlessness.

Notice that the semantic functions RESULT and SYMPT account for most of the Spanish verbs of *anger* defined in Table 1, in a consistent and elegant fashion, as captured below.

- (10) a. 1.1 *Enojar*: <fml> [enfadar & RESULT₂SYMPT₂enojo]
- b. 1.3.2 *Incomodar*: [molestar & RESULT₂SYMPT₂incomodidad]
- c. 1.4 *Disgustar*: [enfadar&RESULT₂SYMPT₂disgusto/pesadumbre]

- d. 1.4.1 *Contrariar*: [disgustar&RESULT₂SYMPT₂contrariedad/dificultad]
- e. 1.4.2 *Desazonar*: [disgustar & RESULT₂ SYMPT₂desazón]
- f. 1.6 *Fastidiar*: [enfadar & RESULT₂ SYMPT₂fastidio/hastío]
- g. 1.9 *Cabrear*: <col> [enfadar & RESULT₂ SYMPT₂cabreo]
- h. 1.12 *Irritar*: [enfadar & RESULT₂ SYMPT₂ira]
- i. 1.16.1 *Encorajinar*: [encolerizar& RESULT₂SYMPT₂rabia]

As a way of exemplifying, the templates of (10) reflect the fact that the event of angering, bothering, upsetting, vexing, disturbing, irking, pissing off, irritating and enraging someone in Spanish results in a new feeling: *enojo* ‘formal anger’, *incomodidad* ‘discomfort’, *disgusto/pesadumbre* ‘annoyance/sorrow’, *contrariedad/dificultad* ‘vexation/difficulty’, *desazón* ‘uneasiness’, *fastidio/hastío* ‘nuisance/disgust’, *cabreo* ‘piss off’, *ira* ‘irritation’ and *rabia* ‘rage’.

In other predicates, the semantic function SYMPT can serve as the argument of ANTI, a unary function that negates it. In other words, the combination of SYMPT and ANTI is used to express that a friendship relationship has ended –as in (1.5) *enemistar* ‘antagonize’– or that composure and patience have been lost –as in (1.10) *descomponer* ‘disturb’, and (1.13) *exasperar* ‘exasperate’.

Another unary function like MAGN may take the hypernym of the class *enfadar* ‘anger’ as its argument and thus define notions such as: (1.11) *enrabietar/enrabiar* ‘nettle’, (1.13) *exasperar* ‘exasperate’ and (1.14) *indignar* ‘incense’, each of one encoding a higher degree of *anger*. Furthermore, the function PLUS can operate on MAGNenfadar to express the highest degree of *anger* in this class, as it is lexicalized in Spanish in (1.15) *enfurecer* ‘infuriate’, (1.15.1) *sulfurar* ‘infuriate very much’, and (1.16) *encolerizar* ‘enrage’.

As illustrated below, semantic functions like MANNER, BECAUSE, PURP, CULM, CONT, INSTR, and MANIF are also helpful to further delineate the rest of the predicates in the class under study:

- (11) a. 1.2 *Enfurruiñar*: <infmI> [MINUSenfadar & BECAUSE₂ SYMPT₂mimo]

- b. 1.6.1 *Reventar*: <col> [MAGNfastidiar & PURP₁CULMSYMP₂enfado]
- c. 1.7 *Ofenderse*: [BECAUSE₁SYMP₁insulto/desprecio] [BECOMEsentir' (x, [enfado'])]
- d. 1.8 *Mosquear*: <col> [enfadar & MANNER₂repentino & MINUSCONTtiempo]
- e. 1.12.1 *Provocar*: [irritar & INSTR₁decir/hacer & PURP₁CULMSYMP₂enfado]
- f. 1.14.1 *Escandalizarse*: [CULMindignar & MANIF₁SYMP₁horror/escándalo] [BECOMEsentir' (x, [enfado'])]

Example (11a) inherits the LS of its hypernym –(5)–, which is then modified by the semantic component coded in brackets. This semantic part, *MINUSENFADAR* & *BECAUSE₂SYMP₂MIMO*, has the following interpretation: *enfurrñar* ‘cause sb to sulk’, used in an informal register, means to anger somebody a little because the second participant has the symptom of (= feels) too much care.

In the same way as in (11a), the templates of (11b), (11d), and (11e) inherit the causative accomplishment structure and show a semantic description of the idiosyncratic properties of each verb. In (11b), the semantic part is interpreted as follows: *reventar* ‘rile’, a predicate used colloquially, is *fastidiar* ‘irk’ to a higher degree (*MAGNfastidiar*), with the purpose of the first participant (*PURP₁*) of making the second one reach the highest point of anger (*CULMSYMP₂* anger). This formalization neatly mirrors the dictionary definitions of this verb as presented in Table 1: (1.6.1) *Reventar*: *fastidiar mucho a alguien con la intención de que se enfade* (‘rile: irk somebody a lot so that they get angry’). In (11d), the second participant is suddenly angered (*MANNER₂repentino*) for a short time (*MINUSCONTtiempo*), whereas in (11e) the irritation of 2 is carried out by the first participant, who says and does something (*INSTR₁say/do*) with the purpose of making the second participant reach the highest point of anger (*CULMSYMP₂* anger).

As pointed out in section 2.2.1, both (11c) and (11f) contain an accomplishment LS in this sub-domain. In (11c), this syntactic structure is modified with a semantic representation of the following type: [BECAUSE₁SYMP₁insulto/desprecio]. This indicates that the participant involved in the accomplishment gets angry because s/he feels insulted or despised. In (11f), the only participant gets incensed (*CULMindignar*) and that anger can be seen because s/he looks shocked (*MANIF₁SYMP₁horror/escándalo*).

As formalized in the examples (9), (10) and (11), the kinds of arguments that a function can operate on are the following:

(12)a. Function + hypernym:

(1.14) *Indignar: enfadar mucho a alguien (...)* → [MAGNENfadar]
 ('incense: anger a lot to-ACC sb (...))

b. Function + internal variable:

(1.14) *Indignar: (...)* causándole (...) → [RESULT₂]
 ('incense: (...) causing-him/her (...))

c. Function + function:

(1.14) *Indignar: (...)* causándole indignación → [RESULT₂SYMPT₂indignación]
 ('incense: (...) causing-him/her indignation)

d. Function + prime:

(1.12.1) *Provocar: irritar a alguien con palabras u obras (...)* → [irritar & INSTR₁decir/
 hacer]
 'provoke: irritate to-ACC sb with words or deeds (...))

e. Function + natural language word:

[SYMPT₂indignación]

A word is needed for (12e). Since defining all the predicates of a language with only sixty-five primes in such a concise format as the LT would be highly unlikely, the LCM contemplates using natural language words in its representations. Such words would be stored in an ontology of nouns and adjectives, and retrieved whenever a kind/type of symptom, manner, place, etc., is specified. These non-primitive elements would eventually be defined in terms of the primes already employed in LTs.

In the semantic module, the inheritance system of semantic information is also captured. As specified in the examples above, templates make use of the ampersand symbol —'&', which is a connective meaning 'and'— followed by the immediate hyperonym to show that hyponyms inherit the properties of their superordinate terms. This unified format allows us to build up LTs that are simpler and easier to read, since we do not have to repeat the previous semantic information already given for the hypernym.

Before explaining the last component of templates, viz. the pragmatic module, let us summarize the LCM templates previously explained in sections 2.2.1 and 2.2.2. Table 5 below accounts for them.

CAUSAR ENFADO (‘TO CAUSE ANGER’)	
1. <i>Enfadar</i> [(do’ (x, Ø)] CAUSE [BECOME sentir’ (y, [enfado’]]	
1.1 <i>Enojar</i>	<fml> [enfadar & RESULT ₂ SYMPT ₂ enojo]
1.2 <i>Enfurrñar</i>	<infml> [MINUSenfadar & BECAUSE ₂ SYMPT ₂ mimo]
1.3 <i>Molestar</i>	[MINUSenfadar & RESULT ₂ SYMPT ₂ inquietud]
1.3.1 <i>Pinchar</i>	[molestar & MANNER ₁ repetido & PURP ₁ CAUS ₂ SYMPT ₂ enfado]
1.3.2 <i>Incomodar</i>	[molestar & RESULT ₂ SYMPT ₂ incomodidad]
1.4 <i>Disgustar</i>	[enfadar & RESULT ₂ SYMPT ₂ disgusto/pesadumbre]
1.4.1 <i>Contrariar</i>	[disgustar & RESULT ₂ SYMPT ₂ contrariedad/dificultad]
1.4.2 <i>Desazonar</i>	[disgustar & RESULT ₂ SYMPT ₂ desazón]
1.5 <i>Enemistar</i>	[enfadar & RESULT _{2&3} ANTI SYMPT _{2&3} amistad] [[[do’ (x, Ø)] CAUSE [BECOME sentir’ (y, [enfado’ (z)])]]]
1.6 <i>Fastidiar</i>	[enfadar & RESULT ₂ SYMPT ₂ fastidio/ hastío]
1.6.1 <i>Reventar</i>	<col> [MAGNfastidiar & PURP ₁ CULMSYMPT ₂ enfado]
1.7 <i>Ofenderse</i>	[BECAUSE1SYMPT ₁ insulto/desprecio] [BECOME sentir’ (x, [enfado’])]
1.8 <i>Mosquear</i>	<col>[enfadar & MANNER ₂ repentino & MINUSCONTtiempo]
1.9 <i>Cabrear</i>	<col> [enfadar & RESULT ₂ SYMPT ₂ cabreo]

1.10 <i>Descomponer</i>	[enfadar & RESULT ₂ ANTI SYMPT ₂ serenidad]
1.11 <i>Enrabetar/enrabiarse</i>	[MAGNenfadar&BECAUSE ₂ motivoleve&MINUSCO NTtiempo]
1.12 <i>Irritar</i>	[enfadar & RESULT ₂ SYMPT ₂ ira]
1.12.1 <i>Provocar</i>	[irritar & INSTR1decir/hacer & PURP ₁ CULMSYMPT ₂ enfado]
1.13 <i>Exasperar</i>	[MAGNenfadar&RESULT ₂ ANTISYMPT ₂ pacencia/ aguante]
1.14 <i>Indignar</i>	[MAGNenfadar & RESULT ₂ SYMPT ₂ indignación]
1.14.1 <i>Escandalizarse</i>	[CULMindignar & MANIF ₁ SYMPT1 horror/ escándalo] [BECOME sentir' (x, [enfado'])]
1.15 <i>Enfurecer</i>	[PLUSMAGNenfadar & RESULT ₂ SYMPT ₂ furia]
1.15.1 <i>Sulfurar</i>	<col> [PLUSMAGNenfurecer]
1.16 <i>Encolerizar</i>	[PLUSMAGNenfadar & RESULT ₂ SYMPT ₂ cólera]
1.16.1 <i>Encorajinar</i>	[encolerizar& RESULT ₂ SYMPT ₂ rabia]

Table 5. Organization of the LCM templates in the Spanish sub-domain of *anger*-verbs

3.2.3. The pragmatic module

The pragmatic component of a template codifies pragmatic and/or register features that also contribute towards the differentiation of the verbs within the same class. This information is written between angled brackets and placed at the beginning of the template. Following Martín Mingorance (1998: 96-97), the pragmatic module may include features related to these three functions:

- (13)a. the informative function: it is the type of discourse a word appears in (*legal, religious, etc.*)

- b. the psychological function: the connotation of a word (ironic, pejorative, and so on and so forth)
- c. the social function: it is related to differences concerning socio-cultural features like the formality of the word, its geographical use, etc.

Within the sub-domain of the Spanish verbs of *anger*, the register features identified are *formality* (<fml>), *informality* (<infml>) and *colloquialism* (<col>). They play a role when differentiating predicates like *enojar* 'formal anger', *enfurruñar* 'cause sb to sulk', *reventar* 'rile', *mosquear* 'bug', *cabrerar* 'piss off' and *sulfurar* 'infuriate very much', which their templates reflect accordingly in (10a), (11a), (11b), (11d) and (10g).

4. Conclusion

This paper has put forth the possibility of bringing together the best of the projectionist and the constructionist worlds by means of the LCM and its notion of lexical template. As exemplified in the lexical class of Spanish *anger* verbs, LTs contain syntactic specifications (external variables) as well as world-knowledge elements (internal variables), thus providing the explicit connection between syntax and semantics. Since the two modules employ a similar formalism -primes, semantic functions and *Aktionsart* distinctions-, the connection between them is straightforward. Furthermore, since constructional templates, with which LTs fuse to arrive at the full semantic interpretation of an expression, make use also of the same neat and precise metalanguage, then the interrelation between the two is complete.

This paper has also suggested that the three components of LCM templates, viz., the syntactic, semantic and pragmatic modules, enable us to systematically express the subtleties of each of the verbs that make up the *anger* sub-domain in Spanish. As opposed to 'plain' RRG structures, these enriched lexico-semantic representations have already come to be crucial in the mapping into syntax, allowing or banning the occurrence of certain psychological verbs in syntactic patterns like the middle construction (cf. Jiménez Briones 2006: 415). We will leave for further research the role of the templates analyzed here in the relationship between lexical and constructional meaning within the Spanish domain of *anger*.

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