LEXICAL REPRESENTATION WITHIN THE LEXICAL CONSTRUCTIONAL MODEL: AN ANALYSIS OF VERBS OF *HAPPINESS* AND *HAPPENING*

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ABSTRACT. *This paper will look at how lexical templates can be designed for the representation of the lexico-semantic, syntactic and pragmatic properties of the English verbs of* happiness *and* happening *within the Lexical Constructional Model (Mairal Usón & Ruiz de Mendoza 2006; Ruiz de Mendoza & Mairal Usón 2007, 2008). A lexical template is a formal meta-entry which in just one format unifies all the grammatically, semantically and pragmatically salient features relevant to a particular verbal class. In this work, we will illustrate how, by combining a number of semantic primitives (Wierzbicka 1996), lexical functions (Mel'cuk 1989) and* Aktionsart *distinctions (Van Valin 2005), a fine-grained description of the rich semantic and syntactic subtleties of these two sub-domains can be provided.*

KEYWORDS: *Lexical template, the Lexical Constructional Model, verbs of happiness, verbs of happening.*

RESUMEN. *En este artículo se analiza el diseño de las plantillas léxicas propuestas en el Modelo Léxico-Construccional (Mairal Usón & Ruiz de Mendoza 2006; Ruiz de Mendoza & Mairal Usón 2007, 2008) como sistemas de representación de las propiedades léxicas, semánticas y sintácticas de los verbos ingleses que expresan felicidad y existencia. Una plantilla léxica es una meta-entrada que en una única expresión codifica los rasgos sintácticos, semánticos y pragmáticos relevantes para toda una clase verbal. En este trabajo presentamos cómo, mediante la combinación de primitivos semánticos (Wierzbicka 1996), funciones léxicas (Mel'cuk 1989) y distinciones de Aktionsart (Van Valin 2005), se puede conseguir una descripción detallada de las propiedades sintáctico-semánticas de las dos sub-clases analizadas.*

PALABRAS CLAVE: *Plantilla léxica, el Modelo Léxico-Construccional, verbos ingleses de felicidad, verbos ingleses de existencia*

1. INTRODUCTION

This paper aims to present the process of elaboration of lexical templates for the English verbs of *happiness* and *happening* within the Lexical Constructional Model (henceforth LCM; Mairal Usón & Ruiz de Mendoza 2006; Mairal Usón & Faber 2007; Ruiz de Mendoza & Mairal Usón 2007, 2008)[1]. It will be shown how, by means of semantic primitives (Wierzbicka 1999; Goddard & Wierzbicka 2002, 2005, 2007), lexical functions (Mel'cuk 1989; Alonso Ramos 2002) and *Aktionsart* distinctions (Van Valin 2005), this way of lexico-semantic representation is able to account for the pragmatic, semantic and syntactic information of the two verbal classes under analysis.

The rest of the paper is structured as follows: section 2 gives a brief overview of the general architecture of the LCM (2.1), followed by an exposition of the notion of lexical template (2.2). In section 3 we deal with a case study where we put forward the lexical templates for the English verbs of *happiness* (3.1) and *happening* (3.2). Section 4 provides the conclusion.

2. LEXICAL TEMPLATES WITHIN THE LEXICAL CONSTRUCTIONAL MODEL

2.1. *Brief outline of the Lexical Constructional Model*[2]

The LCM was conceived in order to account for the relationship between syntax and all facets of meaning construction, including traditional implicature, illocutionary meaning and discourse coherence. It is made of four different levels. At level 1, or core module, we find the notions of lexical template (henceforth LT) and constructional template (henceforth CT), which are elements of syntactically relevant semantic interpretation. Level 2 is a pragmatic module that focuses on low-level inferential aspects of linguistic communication. Level 3 deals with high-level inferences (i.e. illocutionary force). Finally, level 4 includes the discourse aspects of the LCM, especially cohesion and coherence phenomena. Each level is either subsumed into a higher-level constructional configuration or acts as a cue for the activation of a relevant conceptual structure (CS) that yields an implicit meaning derivation. Interpretive activity at all levels is regulated by a number of cognitive constraints. Figure 1 below schematizes the general architecture of the model.

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LTs

subsumption/
conceptual cueing

Level 1
internal and
external
constraints

Level 1 CTs

CORE
GRAMMAR

subsumption/
conceptual cueing

Level 2
internal and
external
constraints

Level 2 CTs/CSs

subsumption/
conceptual cueing

Level 3
internal and
external
constraints

Level 3 CTs/CSs

subsumption/
conceptual cueing

Level 4
constraints

Level 4 CTs/CSs
Discourse representations

conceptual cueing
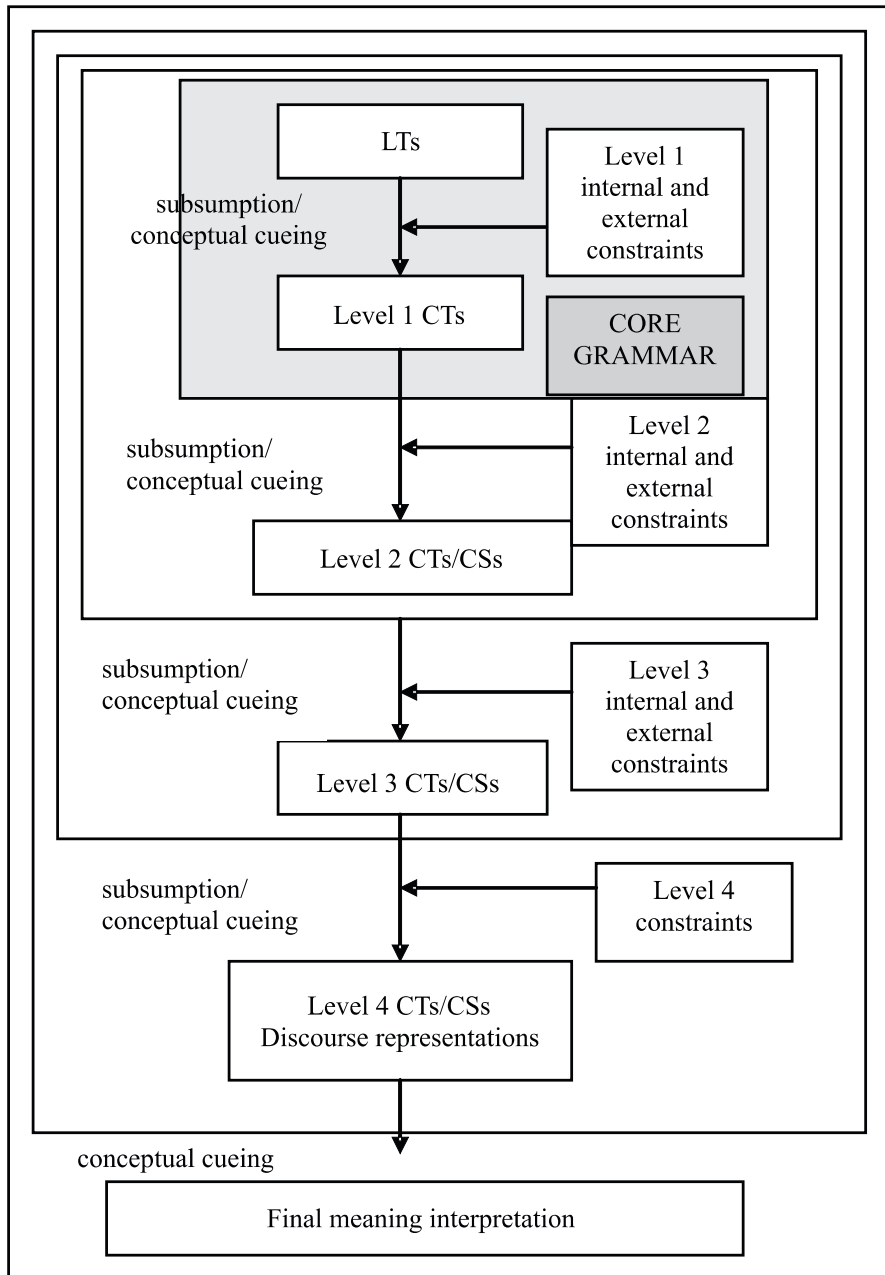
Final meaning interpretation

Figure 1. *The overall architecture of the Lexical Constructional Model*
(Ruiz de Mendoza & Mairal Usón 2008).

This paper is only concerned with Level 1, especifically with the elaboration of templates for the predicates within a verbal class. For a detailed account of the other levels of the LCM included in Figure 1, we refer the interested reader to the research carried out by Ruiz de Mendoza and Mairal Usón mentioned in section 5, as well as the papers included on the website of the LEXICOM project (cf. note 2).

2.2. *The design of lexical templates*

A lexical template is a formal meta-entry which in just one format unifies all the grammatically salient features, as well as the semantic and pragmatic ones, relevant to a particular verbal class. As Mairal Usón and Faber (2007: 138) put it, "a lexical template is a formal representation of a lexical unit and the world-knowledge elements which affect its syntactic representation". Therefore, a LT consists of the three modules or components illustrated in (1):

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

The semantic component represents the meaning of a predicate through the combination of semantic primes and lexical functions. The former correspond to the superordinate predicates identified by the Functional Lexematic Model (FLM; Martín Mingorance 1998; Faber & Mairal Usón 1999), which has also been partially integrated in the LCM, especially those issues dealing with the paradigmatic and syntagmatic organization of the English and Spanish verbal lexicons into semantic classes or lexical domains. Table 1 shows the domains identified by the FLM and their corresponding nuclear terms.

Lexical domain	Nuclear term
EXISTENCE	be/happen
CHANGE	become
POSSESSION	have
SPEECH	say
EMOTION	feel
ACTION	do, make
COGNITION	know, think
MOVEMENT	move (go/come)
PHYSICAL PERCEPTION	see / hear / taste / smell / touch
MANIPULATION	use

Table 1. *Lexical domains and nuclear terms in the FLM* (Mairal Usón & Faber 2007: 147).

It is worth noticing that these 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 & Wierzbicka 2002, 2005, 2007), which has been shown to be valid for over a hundred languages and which are also employed in the LCM when necessary. Table 2 groups the NSM primes which have so far been identified for English and Spanish:

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 2. *NSM primes* (Goddard & Wierzbicka 2005).

These primes are combined with the lexical functions or operators proposed by Mel'cuk (1989) and his colleagues (Alonso 2002) within Meaning and Text Theory (MTT). Lexical functions, however, are used paradigmatically in the LCM to differentiate one predicate from others within the same domain. Unlike in MTT, lexical functions are not employed syntagmatically to account for collocations:

(2) Magn (contrast) = *sharp*; *vivid*   (Mel'cuk 1989: 75)

The meaning associated to an MTT lexical function is abstract and general, so that it can yield different values. As illustrated in (2), the function *Magn*, which expresses intensification, is applied to the argument *contrast*, yielding a number of values, namely, the same collocations –*sharp contrast* or *vivid contrast*–. Besides, the LCM has incorporated new functions to account for the lexico-semantic characteristics of the verbs under study, as presented in Table 3. Accordingly, the MTT lexical functions are considered *semantic functions* within the LCM framework.

Semantic Function	
MTT Lexical Functions (with their application adapted to paradigmatic structure)	**Definition**
MAGN	Intense(ly), very [intensifier], to a very high degree
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
LOC	Temporal location
MANIF	Showing in appearance
BECAUSE	Reason
=	Equal
&	And

Table 3. *MTT & LCM functions for the verbs of* happiness *and* happening.

The syntactic module, on the other hand, captures the lexico-syntactic information of a predicate by means of the logical structures (henceforth LSs) employed in Role and Reference Grammar (henceforth RRG; Van Valin & LaPolla 1997; Van Valin 2005). LSs provide a representation of the semantic and argument structures of predicates using a slightly modified version of Vendler's (1967) *Aktionsart* classes and Dowty's (1979)

lexical decompositional system. Table 4 reproduces such classes and the LSs associated to them.

VERBAL CLASS	LOGICAL STRUCTURE	PREDICATE	EXAMPLE
State	**predicate'** (x) or (x,y)	See	**see'**(x,y)
Activity	**do'**(x, [**predicate'** (x) or (x,y)])	Run	**do'**(x,[**run'**(x)])
Semelfactive	SEML **predicate'** (x) or (x,y) SEML **do'** (x, [**predicate'** (x) or (x,y)]	Glimpse	SEML **see'**(x,y)
Achievement	INGR **predicate'** (x) or (x,y) INGR **do'** (x, [**predicate'** (x) or (x,y)])	Shatter	INGR **shattered'** (x)
Accomplishment	BECOME **predicate'** (x) or (x,y) BECOME **do'**(x, [**predicate'** (x) or (x,y)])	Learn	BECOME **know'** (x,y)
Active Accomplishment	**do'**(x, [**predicate₁'** (x, (y)]) & INGR **predicate₂'** (z, x) or (y)	Run somewhere	**do'**(x,[**run'**(x)]) & INGR **be-at'** (z,x)
Causative	α CAUSES β where α, β are LSs of any type	Scare	[**do'** (x, ∅)] CAUSE [**feel'** (y, [**afraid'**])]

Table 4. *RRG logical structures* (adapted from Van Valin 2005: 45-47).

As shown in Table 4, RRG verbs are divided into states, activities, achievements, semelfactives, accomplishments, and their corresponding causative versions. States and activities are basic, whereas the other classes are derived from them by adding the appropriate operator: SEML for semelfactives (i.e. punctual events without a result state), INGR for achievements, which are punctual changes of state, BECOME for accomplishments (i.e. non-punctual changes of state), and CAUSE for the causative counterparts. There is an additional class, called active accomplishments, which are telic uses of activity verbs and which are signalled by the combination of an activity LS and an achievement LS.

As a glimpse at Table 4 reveals, the lexical representations proposed by RRG only capture those features that have a direct role in the mapping into syntax, leaving out of the picture any type of semantic information which certainly defines a complete domain of verbs. Furthermore, it is not clearly stated where the chain of semantic decomposition ends in LSs. Thus, predicates such as *glimpse*, *learn* and *scare* are defined through more basic items such as *see*, *know*, *feel* and *afraid*, while verbs like *see*, *run*, and *shatter* do not employ simpler units in their descriptions. The reason for this is the absence of a set of indefinable primes from which RRG lexical representations could be built, which forces the theory to use *ad hoc* defining items when necessary. As will be seen in section 3, LCM templates try to overcome these shortcomings with the incorporation of additional semantic and pragmatic information, including relevant register parameters, as well as with the introduction of primitives. Such primitive units, whether NSM primes

or FLM terms, are used in the metalanguage of the semantic and the syntactic modules of the template.

In relation to the pragmatic component of LTs, it encodes pragmatic and register features that also contribute towards the differentiation of the verbs within the same class. In other words, it makes reference to features such as the degree of formality of an expression and topological features. This information is written between angled brackets and placed at the beginning of the template. Let us now illustrate how these three building blocks of templates are assembled to identify the lexico-semantic-syntactic properties of the English verbs of *happiness* and *happening*.

3. CASE STUDY: LEXICAL TEMPLATES FOR THE ENGLISH VERBS OF HAPPINESS AND HAPPENING

3.1. *Verbs of happiness*

The lexical field of EMOTION/FEELING is one of the conceptually richest domains of English, since experiencing a particular emotion means putting into operation nearly all the basic systems of a human being (Apresjan 1997: 94).This is specially so when dealing with *happiness*, since it is considered a primitive within the domain of emotions (Wierzbicka 1999: 36), along with FEAR-LIKE, SHAME-LIKE, LOVE-LIKE, ANGER-LIKE, CRY, HUNGER, THIRST, and PAIN. However, following the main premises of the FLM, that is, by working upwards from lexicographic entries and factorizing dictionary definitions, we have been able to arrange more than 250 *feeling* verbs into a number of lexical sub-domains that encode the ways emotions and feelings are conceptualized in English. The sub-domains vary depending on the feeling they focus on, namely, sadness, happiness, aversion, attraction, pain, fear, surprise, worry and shame (cf. Jiménez Briones 2004). Such a paradigmatic organization is exemplified below for the verbs of *happiness*:

(3) to cause somebody to feel happiness
    1. **Please**: to cause somebody to feel happiness.
        1.1. **Gratify**: (Fml.) to please somebody.
        1.2. **Satisfy**: to please somebody, causing him/her to feel satisfaction.
        1.3. **Fulfill**: to satisfy somebody, causing him/her to feel fulfilled.
        1.4. **Content**: (Fml.) to satisfy somebody, causing him/her to feel contented.
    2. **Delight**: to cause somebody to feel great happiness and pleasure.
        2.1. **Ravish**: (Fml.) (Lit.) to delight somebody because somebody/something is beautiful to look at.
    3. **Cheer**: to cause somebody to feel happier and confident.
        3.1. **Hearten**: to cheer somebody in an encouraging way.
    4. **Gladden**: (Fml.) to cause somebody to feel very happy.
    5. **Thrill**: to cause somebody to feel great happiness, in an exciting way.
        5.1. **Exhilarate**: (Emph.) to thrill somebody, in a refreshing way.

The hierarchical organization of (3) is based on hyponymy: *please*, *delight*, *cheer*, *gladden* and *thrill* are the hypernyms of this class on the basis of which the other predicates – their direct or indirect hyponyms – are defined. The LCM is in the process of *translating* these FLM groupings and rich definitions into universally and typologically valid representations: lexical templates. In order to design the appropriate LTs for the verbs of (3), two features need first to be identified in the definitions above: (i) the central parameter(s) shared by the whole sub-domain and (ii) the distinguishing parameters that help to differentiate the verbs from each other in the sub-domain. The latter could refer to either selection restrictions, pragmatic information, register features, or adverbial modification like manner, purpose, reason, degree, etc. Table (5) accounts for these features in the class of *happiness*:

1. Central parameter(s): cause, feel, happiness		
2. Distinguishing parameters:		
(a) Selection restrictions	(b) Pragmatic or Register features	(c) Adverbial modifications
---	*Formal*, *literary*, *emphatic*	<u>Manner</u>: *in an encouraging /exciting/refreshing way*; <u>Reason</u>: *because somebody/something is beautiful to look at*; <u>Degree</u>: *great*, *happier*, *very*

Table 5. *Central and distinguishing parameters for the verbs of* happiness.

Once the central and distinguishing parameters of a verbal class have been singled out, we are in the position to delineate the already-mentioned components of LTs: the semantic, syntactic and pragmatic modules. In general terms, the central parameter(s) are codified in the syntactic component of LTs in the form of the RRG *Aktionsart* distinctions (cf. Table 4). Selection restrictions and the adverbial modification are captured in the semantic module by combining semantic primes (cf. Table 1 and Table 2) and semantic functions (cf. Table 3). Finally, pragmatic information, including register features, is formalized in the pragmatic component of LCM templates. Table 6 groups the LTs that correspond to the class under study. Each template will be explained in detail afterwards.

to cause somebody to feel happiness	
[(**do'** (x, ∅)] CAUSE [**feel'** (y, [**happiness'**])] *A cheap song sung badly pleases the crowd* (BNC FAS 479)	**PLEASE**: to cause sb. to feel happiness
<fml> [please] *This praise gratified me a lot* (BNC GT4 262)	**GRATIFY**: (Fml.) To please sb.
[please & RESULT₂ SYMPT₂ satisfaction] *An a 5-0 whitewash will satisfy me* (BNC CH7 1562)	**SATISFY**: to please sb., causing him/her to feel satisfaction.
[satisfy & RESULT₂ SYMPT₂ fulfilment] *I don't feel that my present way of life really fulfils me* (CIDE)	**FULFILL**: to satisfy sb., causing him/her to feel fulfilled
<fml> [satisfy & RESULT₂ SYMPT₂ contentment] *Her answer seemed to content him* (CC)	**CONTENT**: (Fml.) to satisfy sb., causing him/her to feel contented
[MAGN happiness] [[(**do'** (x, ∅)] CAUSE [**feel'** (y, [**happiness'**])]] *Her father - then strong and well - had spent it with a gay extravagance which had delighted her* (BNC BMU 560)	**DELIGHT**: to cause sb. to feel great happiness and pleasure
<fml,lit> [delight & BECAUSE₂ MANIF₂good] *He can so exquisitely ravish or torture the soul* (BNC CDL 290)	**RAVISH**: (Fml.) (Lit.) to delight sb. because sb./sth. is beautiful to look at
[PLUS happiness] [[(**do'** (x, ∅)] CAUSE [**feel'** (y, [**happiness'**])]] *His father cheered him by ordering copies of large maps of the Holy Land at ten guilders each* (BNC CBN 340)	**CHEER**: to cause sb. to feel happier and confident
[cheer & MANNER₁encouraging] *Even so, at the end, Irish were a enjoying a romp to hearten supporters who love nothing more than spirit and graft* (BNC A40 272)	**HEARTEN**: to cheer sb. in an encouraging way
<fml> [MAGN happiness] [[(**do'** (x, ∅)] CAUSE [**feel'** (y, [**happiness'**])]] *A certain unusual and unexplainable joy poured into my heart, which all of a sudden so refreshes and gladdens me I forget grief and weariness of every kind* (BNC EDG 1773)	**GLADDEN**: (Fml.) to cause sb. to feel very happy
[MAGN happiness & MANNER₂exciting] [[(**do'** (x, ∅)] CAUSE [**feel'** (y, [**happiness'**])]] *Elton and rock star Eric Clapton thrilled fans at a huge outdoor concert in New York* (BNC)	**THRILL**: to cause sb. to feel great happiness, in an exciting way
<emph> [thrill & MANNER₂refreshing] *The speed of the turning wheel exhilarated him* (BNC)	**EXHILARATE**: (Emph.) to thrill sb., in a refreshing way

Table 6. *Lexical templates for the verbs of* happiness.

The specific LCM template for the definition of *please* only consists of the syntactic module, that is to say, a causative state LS which codifies two sub-events: the first sub-event carried out by *x* ([**do'** (x,)]) causes the second sub-event or the state of happiness in *y* (CAUSE [**feel'** (y, [**happiness'**])]):

(4) [(**do'** (x,)] CAUSE [**feel'** (y, [**happiness'**])]

This verb does not specify any other distinguishing parameters, so the semantic and pragmatic modules are absent. Thus, the representation in (4) indicates that *please* means to cause somebody to feel happiness. It is worth remembering that, unlike *canonical* RRG LSs, the syntactic module of LCM templates employs predicates drawn from the FLM's inventory of nuclear terms or from the NSM's list of semantic primes, which explains why *feel* and *happiness* are used here. Besides, to differentiate the syntactic and the semantic modules that make up each template, two types of variables are employed: external and internal variables. The former are signalled with Roman letters (*x, y, z*) and will always be mapped into syntax, whereas the latter are marked in Arabic numerals (1, 2, 3) that appear as arguments of their appropriate semantic functions. The default linking between external and internal variables is $x = 1$, $y = 2$, and $z = 3$, although it can be specified if necessary.

The template for *gratify* inherits the syntactic information from its hypernym, i.e. *please*, which explains why it has not been included again. The only information that distinguishes *gratify* from *please* is the formality of its usage, which appears in the pragmatic component of the template. However, in the rest of the verbs belonging to the *happiness* sub-domain the combination of semantic primes and semantic functions does play a crucial role.

As specified in section 2.2, LCM semantic functions are understood as logical operations on arguments which yield a value (cf. (2)). As a generalization to the mechanism behind them, it is the number of arguments they select that will determine their nature. Hence, unary functions like LOC, MAGN, and PLUS in Table 3, require one argument only; binary functions like MANNER, RESULT, SYMPT, BECAUSE, &, =, 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 *satisfy*, two binary functions -RESULT and SYMPT– are present:

(5) a. **Satisfy**: to please somebody, causing him/her to feel satisfaction.
     b. [please & RESULT$_2$ SYMPT$_2$ satisfaction].

In this representation, RESULT is a binary function which expresses that something results in someone/something different. In (5b) the subscript 2 is interpreted as one of its arguments and what comes afterwards –SYMPT$_2$satisfaction– 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 of satisfaction. Since these subscripts are the internal variables which, by default, are bound to the second participant of the event, the complete lexical template of (5b) indicates that *satisfy* is to please somebody with the result in the second participant *y* of a symptom of satisfaction.

The semantic functions RESULT and SYMPT are very productive in this sub-domain and can account for two other predicates, as shown below:

(6) a. **Fulfill**: to satisfy somebody, causing him/her to feel fulfilled.
   b. [satisfy & RESULT₂ SYMPT₂ fulfilment].

(7) a. **Content**: (Fml.) to satisfy somebody, causing him/her to feel contented.
   b. <fml> [satisfy & RESULT₂ SYMPT₂ contentment].

The templates of (6b) and (7b) reflect the fact that the event of fulfilling and contenting someone in English implies a new feeling in the second participant: fulfilment and contentment.

In *delight*, *cheer*, *gladden* and *thrill* two unary functions like MAGN and PLUS help to further define their lexico-semantic properties:

(8) a. **Delight**: to cause somebody to feel great happiness and pleasure.
   b. [MAGN happiness] [[(**do'** (x, ∅)] CAUSE [**feel'** (y, [**happiness'**])]]

(9) a. **Cheer**: to cause somebody to feel happier and confident.
   b. [PLUS happiness] [[(**do'** (x,)] CAUSE [**feel'** (y, [**happiness'**])]]

(10) a. **Gladden**: (Fml.) to cause somebody to feel very happy.
   b. <fml> [MAGN happiness] [[(**do'** (x,)] CAUSE [**feel'** (y, [**happiness'**])]]

(11) a. **Thrill**: to cause somebody to feel great happiness, in an exciting way.
   b. [MAGN happiness & MANNER₂exciting] [[(**do'** (x,)] CAUSE [**feel'** (y, [**happiness'**])]]

The representations for *delight*, *gladden* and *thrill* above express the fact that a first argument causes in the second argument a feeling of happiness which is very intense, although *gladden* is generally used in a formal register and *thrill* implies that the second participant (= 2) experiences the feeling of happiness in an exciting way. The function PLUS, which signals more of something, in this case happiness, differentiates *cheer* from the other verbs, since the first participant causes the second one to feel happier than before.

Finally, the templates for *ravish*, *hearten* and *exhilarate* presented below inherit the causative state structure from their hypernyms, thereby capturing only the semantic description of their idiosyncratic properties in the semantic and pragmatic modules:

(12) a. **Ravish**: (Fml.) (Lit.) to delight somebody because somebody/something is beautiful to look at.
   b. <fml,lit> [delight & BECAUSE₂ MANIF₂good]

(13) a. **Hearten**: to cheer somebody in an encouraging way.
   b. [cheer & MANNER₁encouraging]

(14) a. **Exhilarate**: (Emph.) to thrill somebody, in a refreshing way.
   b. <emph> [thrill & MANNER₂refreshing]

In (12b), the semantic part is interpreted as follows: *ravish*, a predicate used in formal and literary contexts, is to delight someone because the second participant (BECAUSE₂) shows a good appearance (MANIF₂good). As far as *hearten* and *exhilarate* are concerned, the former is interpreted as someone cheering someone else encouragingly (MANNER₁encouraging), while the latter is understood as an emphatic verb that implies that someone thrills somebody and this second participant feels very happy in a refreshing way (MANNER₂refreshing).

3.2. *Verbs of happening*

It goes without saying that EXISTENCE is one of -if not the most- central experience to human beings. This lexical field is divided into several domains and sub-domains, most of them of aspectual nature. The verbs of *happening* have the core meaning of *exist in time, becoming real* and their paradigmatic organization is exemplified in (15).

(15) to exist in time (becoming real)

    1. **Happen**: (of events) to be/become real in time.

        1.1. **Transpire**: to happen with secrecy.

        1.2. **Occur**: (Fml.) to happen (esp. of unplanned events)

        1.3. **Befall**: (Fml.) (Lit.) to happen (esp. of unplanned events).

        1.4. **Coincide**: to happen at the same time.

        1.5. **Ensue**: (Fml.) to happen because of something else.

As we have already seen with the verbs of *happiness*, the hierarchical organization in (15) is based upon the logical relation of hyponymy, where there is a hypernym *happen* and several hyponyms: *transpire, occur, befall, coincide* and *ensue*. As explained in section 3.1, we need to identify two features in the definitions above in order to design the appropriate LTs for the verbs of *happening*: (i) the central parameter(s) shared by the whole sub-domain and (ii) the distinguishing parameters that help to differentiate the verbs from each other, as indicated in Table 7.

1. Central parameter(s): happen, time			
2. Distinguishing parameters:			
	(a)Selection restrictions	(b) Pragmatic and Register features	(c) Adverbial modifications
Transpire			Manner: with secrecy
Occur	unplanned events	Formal	
Befall	unpleasant events	Formal & Literary	
Coincide			Locative: at the same time
Ensue		Formal	Reason: because of something else

Table 7. *Central and distinguishing parameters for the verbs of* happening.

As we already pointed out for the verbs of *happiness*, the central and distinguishing parameters that have just been singled out for the verbs of *happening* have a correspondence with the different components of the LTs. In general terms, the central parameter(s) are codified in the syntactic component of LTs in the form of the RRG *Aktionsart* distinctions (cf. Table 4). Selection restrictions and the adverbial modification are captured in the semantic module by combining semantic primes (cf. Table 1 and Table 2) and semantic functions (cf. Table 3). Finally, pragmatic and/or register features are formalized in the pragmatic component of LCM templates. In Table 8 we put forward the LTs for the verbs of *happening*, followed by an explanation of each of them.

To exist in time (Becoming real)	
[**happen'** (x)] *We cannot say for sure what will happen* (CC)	**HAPPEN**: (of events) to be/become real in time.
[happen & MANNER$_i$ secrecy] *Nobody knows what transpired at the meeting* (CC)	**TRANSPIRE**: to happen with secrecy.
<fml> [happen & 1=unplanned events] *The tragedy occurred only minutes after the take off* (LDCE)	**OCCUR**: (Fml.) to happen (esp. of unplanned events)
<fml,lit> [happen & 1=unpleasant events] *Whatever may befall* (CC)	**BEFALL**: (Fml) (Lit) to happen (esp. of unpleasant events)
[happen & LOCsametime$_{\&2}$] [**happen'** (x) ∧ **happen'** (y)] *Macmillan's departure coincided with Ben's return* (CC) *The beginning of the solar and lunar years coincided every 13 years* (CC)	**COINCIDE**: to happen at the same time
<fml> [happen & BECAUSE somethingelse] *Death might ensue within seven weeks* (CC)	**ENSUE**: (Fml.) to happen because of something else.

Table 8. *Lexical templates for the verbs of happening.*

Since *happen* is a primitive, as shown in Tables 1 and 2, and the hypernym of the whole class, its lexical template only contains the syntactic module. It is a state predicate with one participant involved (x) and no further semantic or pragmatic information.

(16) [**happen'** (x)]

The rest of the verbs are defined through *happen* plus some distinguishing parameters illustrated in table (7) in the semantic and pragmatic modules of the templates:

(17) a. **Transpire**: to happen with secrecy.
　　　b. [happen & MANNER$_i$ secrecy]

(18) a. **Occur**: (Fml.) to happen (esp. of unplanned events).
　　 b. <fml> [happen & 1=unplanned events]

(19) a. **Befall**: (Fml.) (Lit.) to happen (esp. of unplanned events).
　　 b. <fml,lit> [happen &1=unpleasant events]

(20) a. **Coincide**: to happen at the same time.
　　 b. [happen & LOCsametime] [**happen´** (x) ^ **happen´** (y)]

(21) a. **Ensue**: (Fml.) to happen because of something else.
　　 b. <fml> [happen & BECAUSE$_1$somethingelse]

The template for *transpire* (17b) inherits the syntactic information from its hypernym, i.e. *happen*, which explains why it has not been included again. It also has an adverbial modification which is translated into the binary lexical function of MANNER. *Occur* (cf. 18) has a register feature of formality which is indicated in the pragmatic component of the template between angled brackets. It is an interesting example because it has a selection restriction, namely, the participant (x), which corresponds to number 1 in the semantic module, is an unplanned event. In the LCM the operator equal (=) is a binary semantic function that indicates the relationship between the participant and its selection restrictions.

In (19) *befall* is used in a formal register or in the literary discourse. It also has a selection restriction where what happens has to be an unpleasant event. *Coincide* (cf. 20) presents a new semantic unary function LOC, which has scope over its argument: the primitive chain[4] *sametime*. Both, function and argument, indicate that two things happen at the same time. We would like to point out that the syntactic module has been included in this case because, unlike the rest of the verbs of the domain, it implies two participants represented by *x* and *y* and formalized as *[**happen´** (x) ^ **happen´** (y)]*, following RRG´s principles on reciprocal verbs (cf. Van Valin 2005:165). According to Levin (1993:59) this verb can appear either with or without a PP complement headed by the preposition *with*. In the absence of the PP complement, the subject must be a collective NP. Note the examples given: *Macmillan's departure coincided with Ben's return* and *The beginning of the solar and lunar years coincided every 13 years*.

Our last example, *ensue* (21), has a register feature of formality and a binary semantic function BECAUSE with two arguments: *1* and the primitive chain *somethingelse*. This representation means that something happens –the first argument– as a consequence of something else.

A word is needed for the use of natural language within the semantic module of LCM templates. It helps describe those aspects of meaning which do not fully correspond to any of the primes which have been singled out to date. These non-primitive elements would eventually be defined in terms of the primes already employed in LTs.

4. CONCLUSION

In this paper, the design of lexical templates for the English verbs of *happiness* and *happening* has proved that an enhanced semantic representation is of paramount importance. These templates allow us to account for those properties which go beyond those aspects of the meaning of a word that are grammatically relevant. What is more, lexical templates together with constructional templates constitute the building blocks of the Lexical Constructional Model because they form the basis for the analysis of the other levels of the architecture of the model, i.e. inference, illocutionary meaning and discourse coherence Therefore, operations at those levels will necessarily make reference to lexical and constructional templates.

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3. List of abbreviations employed in this article: CC 'Collins Cobuild English Language Dictionary', CIDE 'Cambridge International Dictionary of English', CT 'constructional template', CS 'conceptual structure', emph 'emphatic', FLM 'Functional Lexematic Model', fml 'formal', infml 'informal', lit 'literary', LCM 'Lexical Constructional Model', LDCE 'Logman Dictionary of Contemporary English', LS 'logical structure', LT 'lexical template', MTT 'Meaning and Text Theory', NSM 'Natural Semantic Metalanguage', RRG 'Role and Reference Grammar', sb 'somebody', sth 'something'.
4. A primitive chain is a string of two or more primitives. They are used in the LCM in lexical templates in order to give a more detailed information of the meaning of a lexeme in a single unit.

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