An Overview of the Lexical Constructional Model: Part I: Lexical and constructional templates Part II: Subsumption processes

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I
Key assumptions

- The *Lexical Constructional Model* (LCM) (cf. Ruiz de Mendoza and Mairal, 2007ab) arises from the concern to account for the **relationship between syntax and all facets on meaning construction**, including traditional implicature, illocutionary meaning, and discourse coherence.
- The model aims to **reconcile a number of claims from functional projectionist theories and constructional approaches** to language and thus lay the brickwork for a theory that may overcome some explanatory weaknesses on both sides (cf. Nuyts, 2005):

  (i) Functional theories ignore the theoretical **weight of constructions in predicting morphosyntactic structure**; e.g. in (1) there is one argument, the PP, which is not strictly derivable from the argument structure of the predicate *scorn*. This means that this argument is a contribution of the linking construction (*caused-motion*), in which this predicate participates; in (2) and (3) *save* and *imagine* add an argument to their original semantic representation, which explains why these predicates occur within the context of the *caused-motion*, *resultative*, and *way* constructions:

  (1) They scorned him into a depression.
  (2) If time is money, then save yourself rich at Snyder's (from Michaelis, 2003:7).
  (3) I cannot inhabit his mind nor even imagine my way through the dark labyrinth of its distortion (from Goldberg, 1995:10)

  (ii) Construction-based approaches have not developed systematically the set of **constraints for a given construction to unify with a given lexical entry**, an issue that must be dealt with somewhere in the theory:

  - In (4), (5), and (6), we need to specify what type of element is involved in the argument structure of *cut* and *break* which allows the middle construction to be possible.
  - In (6) we need to determine what is missing that blocks the very same construction.
  - It is necessary to determine why *cut* and *destroy* cannot participate in the causative / inchoative alternation, while this is not the case with *break*.

- We would like to determine what constraints explain why certain verbs, which apparently have the same *aktionsart* representation (e.g. most of the examples in (7) are activity predicates), can occur in a caused motion construction, while others block out this pattern, as evidenced in (7b), (7c) and (7d):

(4) a. The bread cuts easily.
b. * The bread cuts.

(5) a. We broke the window.
b. The window broke.
c. The window breaks easily.

(6) a. We destroyed the building.
b. * The building destroyed.
c. *The building destroys easily.

(7) a. They laughed him out of the room.
b. * They ate him out of the room.
c. * They described him out of the room.
d. * Peter shivered Mary into the room

(iii) Functional theories tend to consider much of the **pragmatic and discourse dimension of meaning** as falling outside the domain of grammar proper. For example, Dik's Functional Grammar only discusses those aspects of illocutionary meaning that are "coded" in the system (e.g. basic and derived illocutions, as in *Will you stay?* [question] > *Will you stay, please?* [request]).

- In order to meet these aims the model combines **analytical tools from cognitive and functional approaches to language**. Thus, it makes use of some of the developments of *Cognitive Model Theory* in Ruiz de Mendoza and Pérez (2001), Ruiz de Mendoza and Díez, (2002), and Ruiz de Mendoza (2007). It also draws from work by Faber and Mairal (1999) and Mairal and Faber (2002, 2005, 2007) on lexical decomposition.

- In response to these observations, the model is, at its present stage of development, a **preliminary account of the levels of description of a comprehensive theory of meaning construction**. It also explores the principles that regulate **interaction between each descriptive level and the next**, with a view to endowing the resulting account with a satisfactory degree of **explanatory adequacy**.

- Future developments of the model will also seek to discuss the principles of **syntactic realization** of fully worked out meaning representations and to explore the way syntactic form is mapped onto **phonological configurations**. We also aim to explore the way some phonological features (especially suprasegmental configurations) become part of constructional meaning in a systematic way.

II
The general architecture of the Lexical Constructional Model

- At the heart of the LCM (see figure 1) we find the notions of ***lexical template*** (LT) and ***constructional template*** (CT), which are the building blocks of the model. LCs operate at the core grammar level of description, while CTs are present in different forms (e.g. argumental and idiomatic) at all levels.
- The principled interaction between lexical and constructional templates containing argumental roles supplies the central or *core* meaning layer for other more *peripheral* operations -involving implicated meaning- to take place. Thus, **fully worked-out representations at each level either *cue* for the activation of representations at the next higher level or are constructionally *subsumed* into them**.
- Both ***conceptual cueing*** and ***constructional subsumption*** are cognitive processes and as such **are constrained by a number of principles** that determine their scope of application.
- At **level 1**, lexical items are built into constructional representations, which have a more abstract nature:

    - The semantic structure of lexical items is specified in terms of **lexical templates**, whose internal configuration is established on the basis of **combinations of lexical functions and semantic primes**, both of which have a number of **variables** (or predicate arguments) within their scope.

    - These variables and their associated semantic structure **fuse into constructional variables** (or roles) and their associated structure thus giving rise to core grammar representations.

    - The fusion process, or *subsumption*, is regulated by ***internal* and *external* constraints**, which are licensing factors that filter out impossible combinations of lexical items with constructions.

    - The LCM also allows for **a degree of inferential activity** (i.e. conceptual cueing) at the level of core grammar. Thus, sometimes lexical-constructional subsumption may give rise to an underspecified representation at level 1, as in *She's ready* [for the party], *I will* [marry you], *The student was late* [for his Mathematics class], which, as argued in some pragmatic circles, requires a straightforward form of inferential activity, called *explicature derivation* (cf. Sperber and Wilson, 1995).

- **Level 2** conceptual representations result from:

    - **subsumption of fully worked-out level 1 representations into level 2 constructions**;
    - the **cued activation of low-level situational models** (or scenarios);
    - the **combination of constructional subsumption and cueing**. This process yields a rich array of meaning implications:

        Who do you think you're talking to? => heavily conventionalized implication that the addressee has acted in a way that upsets the speaker. The strength of the conventional implication depends to a large extent on the *do you think* element (cf. *Who are you talking to?*), which thus acquires a fairly stable status within the construction. But the meaning implications can go beyond those obtained on the basis of the constructional mechanism. The *Who Do You Think You're X?* configuration is typically associated with every-day situations where the speaker

gets upset when the addressee has behaved in socially inappropriate ways that directly affect the speaker negatively. In this situation the speaker may feel that he has a right to challenge the addressee's behavior.

- **Level 3** representations:
  - They obey the same principles as their level 2 counterparts.
  - The difference is just one of the kind of scenarios involved in the cueing process, which are not associated to low-level situations (like those found at level 2) but to more **generic scenarios** which specify higher level social conventions applicable to many different low level situations:

    Who do you think you're talking to? => can be interpreted as a warning for the addressee to change his course of action. This speech act value derives from the social convention according to which we are expected –for whatever context- to act in socially acceptable ways, which, if not followed, can give those affected by our behavior the right to take measures. The same basic speech act value can be obtained constructionally through an explicit performative predicate (e.g. *I warn you that you are not addressing me appropriately*), although there are different usage implications: *Who Do You Think You're X?* places greater focus on the misdeed than on the warning since the warning value is only implicit.

- **Level 4** representations:
  - Whether constructional or cued, they make use of **high-level non-situational frames establishing *logical connections*** such as cause-effect or evidence-conclusion, ***temporal relations*** such as precedence or simultaneity, or ***conceptual relations*** such as similarity, contrast, conditioning, and concession, among others. Note that one single expression can be explained on the basis of the convergence of multiple discourse connections. For example, in *The bomb went off; three people died*, we have a precedence relationship from the point of view of temporal sequencing, but also a cause-effect connection between the bomb exploding and the people dying.

- The **final meaning representation** can require further cueing operations that may still add further illocutionary values or other pragmatic (including added illocutionary meaning) or discourse values, such as irony, humor, and exaggeration, to name a few (cf. Barcelona, 2005). For example, constructionally, *The bomb went off; three people died* can be regarded as an informative statement (level 3); then, after the precedence and cause-consequence connections have been worked out (level 4), we can give the whole sequence another illocutionary reading (e.g. a warning).

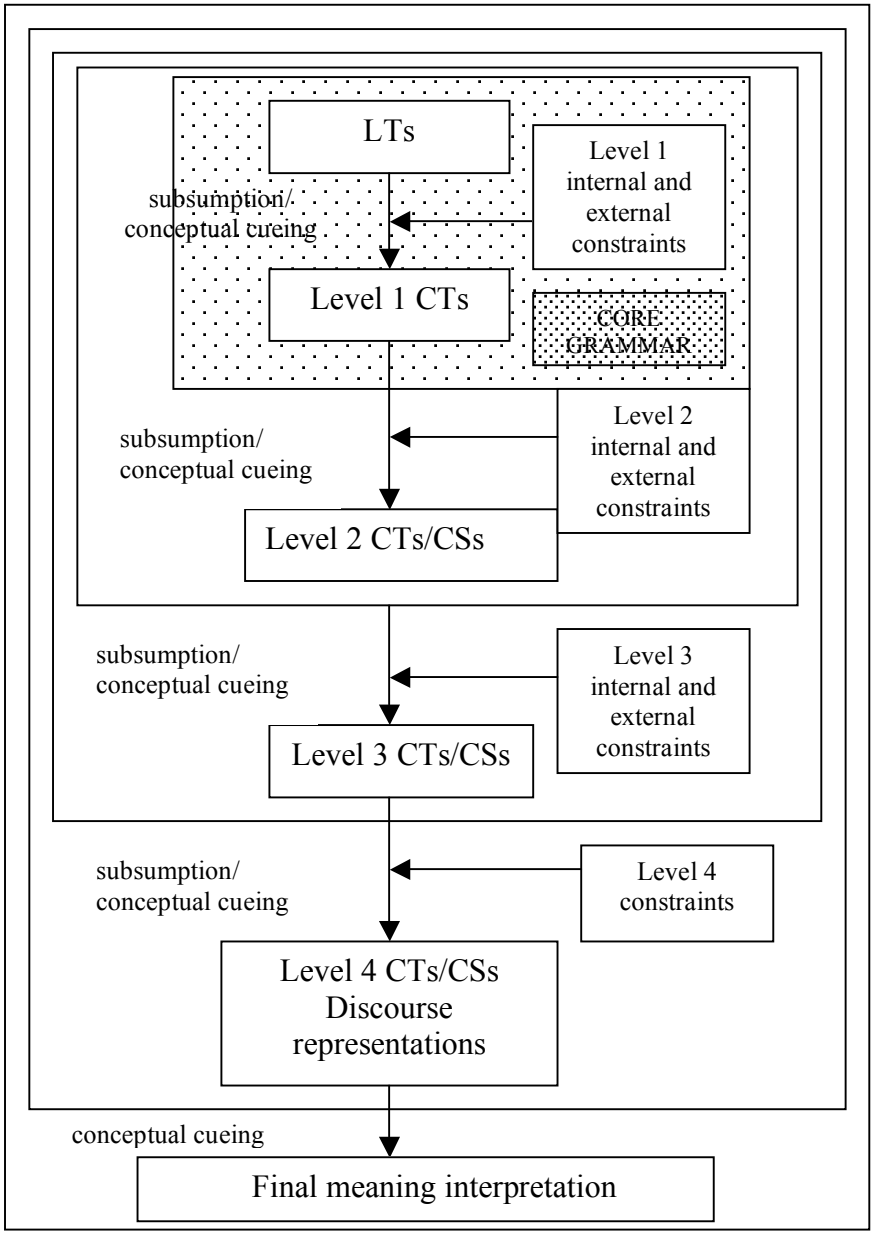


Figure 1. The overall architecture of the Lexical Constructional Model
LT = lexical template; CT = constructional template; CS = Conceptual Structure

Subsumption = the constrained incorporation of lower-level conceptual structure into higher-level configurations (as a result the higher-level structure is *parametrized*)

Conceptual cueing = the activation of an implicit conceptual structure through a lower-level explicit configuration (e.g. thorugh *metonymy*)

III
Lexical representation and the LCM lexical templates

Frames and Frame Semantics

- Fillmore (1985:223) has described frames as "specific unified frameworks of knowledge, or coherent schematizations of experience".

- "Frame semantics [...] begins with the effort to discover and describe the conceptual framework underlying the meaning of a word, and ends with an explanation of the relationships between elements of the conceptual frame and their realizations within the linguistic structures that are grammatically built up around the word" (Fillmore and Atkins, 1994: 370).

- A frame semantics dictionary needs to specify semantic frame elements and then look for regularities between these and their grammatical realizations. To do this, they start by distinguishing three schema types in the 'risk-frame', all of which have the following elements:

  Protagonist [Pr]: the central person in the frame.
  Bad [Ba]: the possible bad outcome, or harm.
  Decision [De]: the decision that could trigger this.
  Goal [Go]: the desired outcome.
  Setting [Se]: the situation within which the risk exists.
  Possession [Po]: something or someone valued by the Protagonist and endangered in the situation.
  Source [So]: something or someone that could cause the harm.

- This set of conceptual tools permits Fillmore and Atkins to explain some of the differences in meaning that we find in sentences like:

  (1) Newborn babies run the risk of hypothermia. [Pr, Ba]
  (2) I had no idea I was risking my life. [Pr, Po]
  (3) You'll have to calculate the risks involved. [Pr, De]

- Each of these sentences, in turn, responds to each of the following three schemas:

  -Schema A: a path leads to two alternative uncertain futures, one of them being bad.
  -Schema B: the protagonist makes a decision which renders him or her vulnerable to some sort of harm.
  -Schema C: the same as Schema B, but the protagonist has in mind a desired outcome and he or she is aware of the potentially bad outcome.

- Illustration of the other frame elements can be seen in these examples:

  The health risk *from apples* is 'minuscule' (So)
  Living in San Francisco is a risk (Se)
  They were willing to risk everything *for their faith* (Go)

- This description allows Fillmore and Atkins to eliminate dictionary senses, which may be described in terms of different underlying schemas or as different forms of structuring elements from a single schema. It also deals with polysemy, in a very elegant way, as the

instantiation of different schemas. For example, in *He risked his life*, both schemas B and C can be called up (ie. 'he risked his life but was not aware of it'; or 'he risked his life for a worthless cause'). One more advantage is found in that the proposed framework provides a way to make a difference between the two common phrases 'take a risk' and 'run a risk': only 'run a risk' fits Schema A; then, both 'run' and 'take' are acceptable with [Ba] as complement, but [De] forces the use of 'take'. Consider the following examples, some of them simplified from the ones provided by the authors:

> Newborn babies run (*take) the risk of hypothermia [Pr, Ba] (example 1 above). (Schema A).
> He was running/taking the risk of collapsing, though he didn't know it [Pr, Ba]. (Schema B).
> He chose to run/take the risk of being hit by a car as he started to cross the road. [Pr, Ba] (Schema C).
> He took the risk of jumping off the cliff [Pr, De]. (Schema C).

Semantic Primes and the *Natural Semantic Metalanguage*:

Wierzbicka (1996: 154-155)

> *X* is *Y*'s mother. =
> (a) at one time, before now, *X* was very small
> (b) at that time, *Y* was inside *X*
> (c) at that time, *Y* was like a part of *X*
> (d) because of this, people can think something like this about *X*:
> "*X* wants to do good things for *Y*
> *X* doesn't want bad things to happen to *Y*".

Advantages of the account:

- It makes use of natural language.
- It is based on a typologically valid set of primes.
- It provides manageable descriptions of concepts.

Disadvantages:

- Unlike frame semantics the NSM account is not capable of dealing with many every-day uses of concepts (i.e. it is not encyclopedic in nature). This has consequences to account for well-entrenched metaphoric and metonymic extensions of concepts:

(4) Mary is a mother without children (default interpretation = she gives motherly love to other people).
(5) She mothered him well (default interpretation = she was her biological mother and took good care of him)
(6) She mothered the baby (as if it were her own) (default interpretation = she was not her biological mother but nurtured the baby as a good biological mother would do).
(7) My wife really mothers me! (default interpretation = she spoils me).
(8) She is full of motherly love towards her children (default interpretation = she is their biological mother and treats her children as a good biological mother does).

(9) She treats the sick and the lonely with true motherly love (default interpretation = she is not their biological mother but treats them as a good biological mother).

Predicate frames (Dik, 1997; Martín Mingorance, 1995)

- *assassinate* [V] $(x_1: \langle human \rangle)_{Ag}$ $(x_2: \langle human \rangle)_{Go}$ ↔
  murder [V] $(x_1)_{Ag}$ $(x_2)_{Go}$ $(x_3$: *treacherous* [A]$))_{Manner}$
- *murder* [V] $(x_1: \langle human \rangle)_{Ag}$ $(x_2: \langle human \rangle)_{Go}$ ↔
  kill [V] $(x_1)_{Ag}$ $(x_2)_{Go}$ $(x_3$: *intentional* [A]$))_{Manner}$
- *kill* [V] $(x_1)_{Ag/Fo}$ $(x_2: \langle human \rangle)_{Go}$ ↔
  cause [V] $(x_1)_{Ag/Fo}$ $(e_1$: [die [V] $(x_2))_{Proc}$ $])_{Go}$
- *die* [V] $(x_1: \langle anim)_{Proc}$ ↔
  come about [V] $(e_1$: [*dead* [V] $(x_1))_{\varnothing}$ $])_{Proc}$
- *be sleepy*$_v$ $(x_1$: + anim $(x_1))_{Proc}$
  def = [begin$_v$ $(x_1)_{Proc}$ $(x_2$:[fall asleep$_v$ $(x_1)_{Proc}$] $(x_2))_{Goal}]_{Process}$
- *be drowsy*$_v$ $(x_1))_{Proc}$
  def = [begin$_v$ $(x_1)_{Proc}$ $(x_2$:[fall asleep$_v$ $(x_1)_{Proc}$] $(x_2))_{Goal}]_{Process}$ $(y_1$:[appear$_v$ $(x_1$:calm $_{Adj}$ & relaxed $_{Adj}$ $(y_1))_0]$ $(y_1))_{Circumstance}$
- *hew* [V] $(x_1$: 'animate'$)_{Ag}$ $(x_2: \langle hard\ material \rangle)_{Go}$ ↔
  df = cut [V] $(x_1)_{Ag}$ $(x_2)_{Go}$ $(\delta_1$: rough & difficult$)_{Manner}$

Logical structures (Role and Reference Grammar):

VERB CLASS	LOGICAL STRUCTURE	EXAMPLE	INSTANTIATION OF LS
State	**predicate'** (x) or (x,y)	see	**see'** (x,y)
Activity	**do'** (x, [**predicate'** (x) or (x,y)]	run	**do'** (x,[**run**' (x)])
Achievement	INGR **predicate'** (x) or (x,y), *or* INGR **do'** (x, [**predicate'** (x) or (x,y)]	pop (burst into tears)	INGR **popped'** (x)
Semelfactive	SEML **predicate'** (x) or (x,y) SEML **do'** (x, [**predicate'** (x) or (x,y)]	glimpse, cough	SEML **see'** (x,y)
Accomplishment	BECOME **predicate'** (x) or (x,y), *or* BECOME **do'** (x, [**predicate'** (x) or (x,y)]	receive	BECOME **have'** (x,y)
Active accomplishment	**do'** (x, [**predicate$_1$'** (x, (y))] & BECOME **predicate$_2$**' (z,x) or (y)	drink	**do'** (x,[**drink**' (x,y)]) & BECOME **consumed'** (y)
Causative accomplishment	α CAUSES ß where α, ß are LS of any type	kill	[**do'** (x, ∅)] CAUSE [BECOME [**dead'** (y)]

Table 1: Inventory of RRG logical structures

- The LS inventory is intended to capture only those aspects of the meaning of a word that are grammatically relevant. It is capable of accounting for some important restrictions on constructional alternations:

(10) a. The boy broke the window with a bat > A bat broke the window

b. He ate his soup with a teaspoon > *A teaspoon ate his soup

- The *Instrument Subject* construction is possible for 'break' verbs but impossible for consumption verbs. The reason for this oddity in the transitivity system is that 'break' verbs denote causative accomplishments while consumption verbs are active accomplishments. The *Instrument Subject* construction requires a causal element, which makes the construction sensitive only to the former predicate class.
- As predicted by the RRG LS configuration, *kill* can take part, like *break*, in the *Instrument Subject* construction:

(11) The gunman killed the sheriff with a six-shooter> A six-shooter killed the sheriff.

However, its grammatical behavior is not always comparable to that of 'break' verbs:

(12) The boy broke the window into a million pieces.
(13) *The gunman killed the sheriff into a dead body.
(14) Finally, Madison broke the window open and went in.
(15) *Finally, the gunman killed the sheriff dead.

- The verb *kill*, unlike *break*, cannot be used in the caused-motion and resultative constructions. This difference in grammatical behavior is not revealed by the LS of both verbs, which calls for a greater degree of refinement in the semantic representation of these verbs:

break: [**do'** (x, ∅)] CAUSE [BECOME [**broken'** (y)]
kill: [**do'** (x, ∅)] CAUSE [BECOME [**dead'** (y)]

- Both *kill* and *break* have a resultative ingredient (captured by the primitive concept BECOME in LS). However, killing only admits one possible result, i.e. death, while breaking is compatible with a wider range of possibilities, expressed through a figurative use of the caused-motion configuration:

(16) a. Harry broke the glass into a thousand pieces.
b. July broke the vase into little fragments.
c. I broke the pillar into three parts and glued them to the base.

- This difference between the two kinds of verb, which is grammatically relevant, is not captured by the standard LS formalisms of RRG. A way out of the problem consists in enriching semantic representations in such a way that it is possible to predict with greater accuracy when a given lexical item may or may not take part in a construction. For this purpose the LCM makes use of the notion of *lexical template*, as developed by Mairal and Faber (2002, 2005, 2007).

Lexical templates

- The notion of lexical template is originally a development of the logical structures (LS) postulated in Role and Reference Grammar (RRG) (cf. Van Valin and LaPolla, 1997; Van Valin, 2005). LS are based on Vendler's well-known *aktionsart* distinctions (cf. Vendler, 1967).

- Lexical templates are constructed on the basis of a universal semantic metalanguage which includes an inventory of primes obtained by extensive factorization (i.e. the search for

meaning regularities across predicates within a lexical domain) of meaning definitions and by a catalogue of operators, which express the way semantic primes combine to express the more specific hyponyms.

- Faber & Mairal (1999) structure the English lexicon into a number of lexical domains: EXISTENCE (**be, happen**); CHANGE (**become**); POSSESSION (**have**); SPEECH (**say**); EMOTION (**feel**); ACTION (**do, make**); COGNITION (**know, think**); MOVEMENT (**go/move**); PHYSICAL PERCEPTION (**see, hear, taste, smell, touch**). Each domain is identified by means of a prime (or undefinable item) in boldface. These primes can be used for the formulation of the meaning of more specific lexical items, e.g. **feel** is used to define a number of hyponyms that belong to the lexical domain of EMOTIONS, e.g. *scare, terrorize, terrify*. Factorization allows us to identify a number of primes which mark where the semantic decompositional chain actually ends. A further step is to encode the differentiating properties between predicates belonging to the same lexical domain (see appendixes I and II).

- The set of semantic primes coincide to a great extent with those used in Wierzbicka's *Natural Semantic Metalanguage*, which has been shown to be valid in almost over a hundred languages (cf. Wierzbicka, 1999; Goddard and Wierzbicka, 1994, 2002) (see Appendix III).

- The operators that express the conceptual syntax are based on the notion of lexical function as propounded in Mel'cuk's *Explanatory and Combinatorial Lexicology* (ECL). Lexical functions have been shown to be typologically valid (cf. Mel'cuk, 1989; Mel'cuk & Wanner, 1996) (see Appendix IV).

- We have adapted Melchuk's lexical functions -originally devised to apply to the combinatorial possibilities of a lexical unit- so that they can account for lexical domain-specific relations, and allow the codification of those semantic parameters that are not visible to syntax, e.g. the manner, purpose, means, social status, speaker's attitude, the urgency of a request, among others. (cf. Faber & Mairal, 1999; Mairal & Faber, 2007). There is a large degree of coincidence between the parameters obtained through systematic factorization and the list of collocational functions provided by the ECL.

- Lexical templates have the following format (see Appendix V):

***predicate*:**	[SEMANTIC MODULE<lexical functions>]	[AKTIONSART MODULE <semantic primes>]

1. The *semantic* module, which expresses the semantic and pragmatic parameters that underlie predicate meaning, is expressed in terms of lexical functions.
2. The *aktionsart* module is based on RRG logical structures though the terms in boldface are not those used in RRG, but rather belong to an inventory of primes.

grasp:	[MagnObstr & $Culm_{12[[ALL]]}$] **know'** (x, y)
consider:	[$LOC_{in}^{TEMP\leftrightarrow}{}_{12}$ CONT] **think'** (x, y)
command:	<$MAGN_{1[PERM]\,23}$, $LOC^{soc\uparrow}{}_{(1)}$ (PLACE_TYPE: political/military)> [**do'** (x, [**say'** (x,y)])] CAUSE [**do'** (y,z)]

Lexical templates versus frames

- If we want to provide richer semantic representations, the question is why don't we adopt frames as in Frame Semantics? Although the methodology is very similar (both approaches propound core and peripheral elements as part of the semantic description of a predicate), frames lack a unified formalism that is close to constructional templates. This is an important point since then *lexical-constructional subsumption,* the cardinal operation in the model, becomes a more straightforward process.
- Semantic frames are schematic representations of situation types (e.g. 'buying and selling', 'eating', 'spying', etc.) describable in terms of participants and their roles. E.g. the ingestion frame consists of an "ingestor" that consumes food, drink, etc. ("ingestibles") often with the help of an "instrument". These are "core" elements. Other non-core elements are the "degree" or extent to which ingestibles are consumed, the "manner" of performing the action, the "place", the "time", the "purpose", and the "source". Associated with the frame there are a number of lexical units (e.g. *consume*, *devour*, *dine*, *feed*, *gobble*, *slurp*) and inheritance relations with other frames (for ingestion, "intentionally affect", i.e. performing an intentional act that affects a patient).
- Frames are constructed inductively on the basis of corpus data by examining the kind of information conveyed by phrases that are constructionally associated with given predicates and assigning labels to them (e.g. "ingester", "ingestible", etc. for the ingestion frame). LTs also make reference to roles and participants, but differ from frames in several ways:

    1. Unlike Logical Structures and like frames, LTs include a rich semantic description. However, unlike frames, lexical templates include a more articulated metalanguage that is more explanatory and powerful than that of semantic roles and very much in accord with the metalanguage used for constructional templates.
    2. LTs are constructed on the basis of the *Aktionsart* distinctions proposed in RRG. This feature allows the analyst to introduce a large degree of regularity in his description of "inheritance" mechanisms, which enhances the explanatory adequacy of the model. *Aktionsart* regularities are captured by the external variables of the template (which roughly correspond RRG's logical structures) and by a set of high-level elements that resemble traditional semantic primitives but differ from them in significant ways.
    3. Instead of postulating situation types, our approach divides a lexical domain into a number of lexical subdomains which focalize different semantic and pragmatic phases: for example, 'to cause sb to understand sth', 'to think something is true' are just some of the lexical subdomains that pervade the domain of cognition (cf. Faber and Mairal, 1999, for a classification of the architecture of the English lexicon in terms of lexical domains and subdomains). The crucial issue is that frames and lexical templates are different ways of capturing the elements of scenarios.
    4. LTs contain internal variables, i.e. world-knowledge elements of semantic structure, which capture the way in which internal variables relate in a way specific to the predicate defined by the lexical template.
    5. LTs are in fact lower-level constructions that can be fused into higher-level characterizations such as the caused-motion, the resultative, or the benefactive constructions. Since the formal apparatus of LTs shares with higher-level constructions all elements excepting those that are specific to a lower-level class (the internal variables), absorption of a lexical template by a construction becomes a straightforward process. In sum, lexical templates include a representational metalanguage for lexical and constructional representations, which consists of both low-level and high-level semantic components.

IV
Constructional templates

Level 1 constructions (argumental constructions)

Type of construction		Semantic representation
Ditransitive	*Pat sent Hill a fax*	X CAUSES Y TO HAVE Z
Caused motion	*Pat sneezed the napkin off the table*	X CAUSES Y TO MOVE TO Z
Resultative	*She kissed him unconscious*	X CAUSES Y TO BECOME Z
Intransitive	*The fly buzzed into the room*	X MOVES Y
Conative	*Sam kicked at Bill*	X DIRECTS ACTION AT Y

Table 1. Some construction types (cf. Goldberg, 1995:3-4)

- Golbergian constructions consist of sets of arguments that relate among one another on the basis of abstract predicates such as CAUSE, BECOME, MOVE, and HAVE.
- In our own proposal, we retain this basic configuration but adapt it to the requirements of the universal semantic metalanguage that we use together with its associated *aktionsart* characterizations. As a consequence, level 1 constructional templates make use of the same high-level representational mechanisms that characterize lexical templates, except for internal variable descriptions, since these are idiosyncratic to each verb and verb class.
- This feature of construction templates is natural since level 1 constructions are built by abstracting away elements common to a number of lower-level predicate classes.
- There are some verb classes that linguists have traditionally classified as transitive, where we typically have an actor and an object of the action. We regard transitivity in verbs as the potential of a verb (or a whole verb class) to participate in a higher-level configuration called the *transitive construction*, which has the following basic constructional template:

  [**do´** (x, y)]

  In this template, we specify an action (**do´**), an actor (x) and an object of the action (y).
- The transitive configuration is the basic building block for other constructions, such as the *ditransitive* (which adds one more constructional argument), the *resultative* (which adds a predicate expressing a resultant state of the object), and the *caused-motion* construction (which is in fact a case of resultative construction where the resultant state is a change of location).
- The caused-motion construction (e.g. *Then they pushed me into my cell and locked the door*) conflates the roles of 'affected object' and 'actor' into one element of structure (the speaker in the examples above). It also conflates into one single predicate ('push') two predicate values: causing motion and manner of causing motion. We propose the following constructional template for caused-motion, where the asterisk marks the optional status of an element:

  [**do´** (x, y)] CAUSE [BECOME *NOT **be-LOC´** (y, z)]

- The inchoative construction describes a telic event which involves one entity that undergoes a change of state or position:

[$Caus_1 Fact_1$] [BECOME/ INGR **pred'** (x)], 1= x
[$Caus_1 Fact_1$] [PROC **move'** (x)] <& INGR **be-LOC'** (y,x)>)], 1= x

Caus1 and Fact1 capture the fact that the first argument can be understood as an in-built causer involved in the realization (Fact ' factum') of the change of state depicted.

Level 2 constructions

- Level 2 meaning can be obtained on the basis of a combination of degrees of pragmatically guided and linguistically guided situation-based low-level inferencing.
- Traditionally, pragmatically guided inferencing has been termed *implicature*. On the other hand, linguistically (i.e. lexically or constructionally) guided inferencing has been called *presupposition*. Our account differs from traditional accounts on presupposition and implicature in pragmatics and the philosophy of language in two ways:

(i) First, presupposition is not a pragmatic inference but a consequence of the lexical or constructional properties of semantic descriptions. Thus, factive predicates (e.g. *regret*, *realize*, *be proud that*) have the property of introducing a thematic argument that is presented as true from the experiencer's perspective. This property is captured in their corresponding lexical templates by applying the relevant set of lexical function and primitives to their second internal argument:

***regret*:**	[SYMPT (sadness) $\text{INVOLV}_{1,2}$ (want)DEGRAD $(\text{do})_2$ $\text{LOC}_{\text{in}}^{\text{temp}\leftarrow}/(\text{become})_2$ $\text{LOC}_{\text{in}}^{\text{temp}\leftarrow}$ *because* $\text{PROP}_{1,2}(\text{true})_2$] **feel'** (x, y)

The template specifies that there is a sentient entity that experiences sadness because (s)he believes that (s)he had acted in the past in a certain harmful way and wishes (s)he had not done so.

(ii) Second, so-called implicature can have a constructional motivation; e.g. the *What's X Doing Y?* construction (Kay and Fillmore, 1999):

(1) a. What's the child doing?
b. What's the child doing in the kitchen?
c. What's the child doing in the kitchen with the carving knife?

- The *What's X Doing Y?* construction seems to convey the idea that there is something wrong about the situation described; this value readily cues for a complaint reading.
- In our view, what is really noteworthy about this construction is the importance of the Y element to guarantee this meaning value. The greater the elaboration of the Y element, the clearer the idea that something is wrong (and consequently the greater the complaint interpretation). This is so because the construction implies that the speaker, in being able to supply so much information about what is going on, already knows the answer to his own question.
- The *What's X doing Y* is related to other constructions that also seem to convey the idea that something is wrong in the situation described:

(2) a. Who's been messing with my computer?
b. What's the neighbor been doing with my flowers?
c. Where's he been the last 50 years, golfing with Joe Kennedy Sr.?
d. Why's he been messing with my computer?

e. Where's he been all his life?

The difference is that in *Wh-'s been Y?* the description is provided by a constructional presupposition, while in *What's X Doing Y?* the description is explicit.

Level 3 constructions

- Some functional grammar accounts (e.g. Dik, 1997; Halliday & Matthiessen, 2004) assume that illocutionary meaning is part of grammar and has to be incorporated in grammatical description only in so far as there are linguistic devices to express such meaning.
- Dik (1997) argues that there are grammatical mechanisms that can be used to derive other illocutions from the basic ones. For example, declarative, imperative, and interrogative sentences can be converted into requests by adding *please* (e.g. *Please, I hate this music!*; *Give me the book, please*; *Can you swim, please?*), declaratives into questions by means of a tag (e.g. *She's a nice girl, isn't she?*), and imperatives into exclamations through suprasegmental features (e.g. *Look who's THERE!!*), among other possibilities.
- Our own view is very close to Dik's proposal, but with the crucial difference that what Dik calls grammatical derivation is not really so, but a matter of constructional conventionalization (Ruiz de Mendoza and Baicchi, 2007). We thus believe that there are level 3 constructions that evince the same degrees of conventionalization that we find for level 2 constructions.
- Grammatically, the *Can You Y?* string is interrogative so it could be argued, *à la* Dik, that the request interpretation is derived pragmatically, in contrast with examples like (3c), where we have grammatical derivation through the addition of *please*. But this is clearly not the case for two reasons. First, there are sentences like (3a) and (3b) that can hardly be converted into requests, not even through grammatical mechanisms,. Second, there are *Can You Y?* sentences that have an extremely strong default interpretation as requests, as is the case with (3d).

(3) a. Can you write Morse code? > ?Can you write Morse code, please?
b. Can you hear the ocean? > ?*Can you hear the ocean, please?
c. Can you explain minimalism? Can you explain minimalism, please?
d. Can you listen to me?

- Evidently, the existence of default interpretations that are not predictable from grammatical form calls for a non-derivational account. Instead, we propose a constructional account of non-pragmatic illocutionary meaning, where illocutionary constructions may have compulsory (non-parametrizable) and variable (parametrizable) elements, as was the case with level 2 constructions.
- Parametrization is not an unrestricted process. Thus, the Y element in the *Can You Y?* requestive construction can only take verbal predicates belonging to certain lexical classes (state and non-active accomplishments predicates are excluded). Additionally, the Y element may optionally include *please* (*Can you listen to me, please?*) or beneficiary complements (*Can you sing for me?*) as ways of either reinforcing the requestive character of the sentence or simply forcing the request interpretation.
- Finally, note that the non-parametrizable part of the construction, just like in some level 2 constructions, admits some variation with slight changes in meaning that do not alter the overall illocutionary interpretation. That is, "non-paramatrizable" does not mean absolutely invariable but rather realizable through a limited set of options. Thus, we can have sentences

using *will you*, *would you* and *could you* forms for the *Can You* part of the construction (*Can/could/will/would you give me some help?*).

- The question may arise as to the status of *Can You Y* strings that have a purely interrogative function. In the LCM such strings are considered parametrizations of the Aux-NP constituents of the *polar interrogative* construction. Obviously, *Can You Y* requests have been derived by conventionalizing one form of performing such parametrization and giving it a stable speech act value. The stable association of a specific interpretation with the construction is a matter of degrees of entrenchment.

Level 4 constructions

- These are constructions that capture conventional implications that go beyond the clause level. An example is the *Let Alone* construction (Fillmore, Kay and O'Connor, 1988; e.g. *Would any one buy this garbage, let alone eat it?*), or *X Let Alone Y*. The construction sets up an entailment relation between the two constituents that it relates. In this relation, the state of affairs depicted in Y is considered less likely to happen than the one in X. In turn, X either expresses or implicates a negative situation, i.e. one in which a state of affairs is portrayed as not being the case. This kind of discourse relationship places emphasis on the Y element.
- The *X Let Alone Y* configuration has two highly variable elements (X is negative and Y provides a contrast on the bases of a scale) and one element with a low range of parametrization possibilities: the coordinating conjunction can sometimes be replaced by *never mind* and *much less* (e.g. *A lot of poor parents barely have time to see their kids, never mind/much less cook for them*).
- Another level 4 construction that admits a degree of variation is *Just Because X Doesn't Mean Y* (e.g. *Just because we live in Berkeley doesn't mean we're left wing radicals*), used to indicate that the second constituent does not necessarily follow from the first (Holmes & Hudson, 2000). *Just Because* is not easily modifiable without doing violence to the construction (**Because we live in Berkeley doesn't mean we're left wing radicals*), while *Doesn't Mean* does admit some variation (*Just because we live in Berkeley is no reason to think we're left wing radicals*; cf. Bender & Kathol, 2001).
- In our view, the *Just Because X Doesn't Mean Y* construction is a highly conventionalized parametrization of a more generic *evidence-conclusion*/*conclusion-evidence* pattern generally expressed through discourse connectors such as *so* and *after all*:

(4) a. They live in Berkeley. They must be left wing radicals.
b. They must be left wing radicals. They live in Berkeley.
(5) a. They live in Berkeley, so they must be left wing radicals.
b. They must be left wing radicals; after all, they live in Berkeley.

The discourse relationship between the two sentences in (4a) is one of evidence-conclusion and in (4b) of conclusion-evidence. The connections are implicit and need to be derived inferentially. This is not the case in (5a) and (5b), where they have been made explicit through discourse connectors, with a clear constructional potential. We have two reverse constructions *X So Y*, and *Y After All X*, where X and Y can be either positive or negative statements, with various meaning effects:

(6) a. They don't live in Berkeley, so they can't be left wing radicals.
b. They can't be left wing radicals; after all, they don't live in Berkeley.
c. They live in Utah, so they can't be left wing radicals.
d. They can't be left wing radicals; after all, they live in Utah.

e. They don't live in Utah, so they could be left wing radicals.
f. They could be left wing radicals; after all, they don't live in Utah.

- Relevance theorists (e.g. Blakemore, 2002; Blakemore and Carston, 1999) have treated discourse connectors as cases of *procedural encoding*, i.e. instructions or constraints on the kind of inferential process that the hearer is expected to follow. In *X So Y* the hearer is expected to think of X as the evidence for the conclusion in Y; this pattern is reversed in the interpretation of *Y After All X*.
- However, these connectors are not procedural any more than other aspects of interpretation at other levels, including *subsumption*. What discourse connectors do is activate high-level cognitive models like the *evidence frame*. *So* and *after all* exploit the evidence frame in converse ways by parametrizing differently the X and Y elements in it.

Evidence frame:
A state of affairs X is evidence of the existence of another state of affairs Y if thinking of X as true involves thinking of Y as true as well.

V
Subsumption processes

- In the Lexical Constructional Model (LCM) *subsumption* is a stepwise meaning production mechanism that consists in the principled incorporation of lower levels of semantic structure (captured in the form of lexical and constructional templates) into higher levels of syntactically-oriented structure (Ruiz de Mendoza & Mairal, 2007ab; Ruiz de Mendoza, 2007).
- Subsumption is a constrained process that takes place at all levels of meaning derivation:

    1. At the level of core grammar, *internal constraints* specify the conditions under which a lexical template may modify its internal configuration. They take the form of licensing or blocking factors that depend on lexical class ascription, lexical-constructional compatibility, and either predicate or internal variable conditioning of external variables.
    2. *External constraints* result from the possibility or impossibility of performing high-level metaphoric and metonymic operations on the lexical items involved in the subsumption process.

Lexical-constructional subsumption

- Lexical and constructional templates interact in a constrained way. First, there is a general principle of conceptual interaction according to which higher-level conceptual patterns incorporate lower-level patterns. This principle was first identified by Ruiz de Mendoza (1997) and explored in detail on the basis of different kinds of cognitive model interaction by Ruiz de Mendoza and Díez (2002).
- In our view, a specific case of the principle is what Michaelis (2003) has termed the *Override Principle* in the context of constructional coercion. This constructional principle states that the meaning of a lexical item conforms to the meaning of the structure in which it is embedded:

(1) The Washington press corps literally laughed him out of the room.

In example (1) 'laugh' has undergone subcategorial conversion from a verb with a prepositional complement (**laugh-at´** (x, y) 'laugh at someone') to a purely transitive verb (**laugh´** (x, y) 'laugh someone').

-It may be observed that subcategorial conversion is a consequence of the Override Principle, which requires an adjustment of the meaning of 'laugh' to make it acquire attributes compatible with the caused-motion construction.
-But, in our view, the situation is slightly more complex. We may wonder why 'laugh' can participate –through coercion and subcategorial conversion- in the caused-motion construction, while this is not the case for other action predicates that are naturally transitive and do not need that kind of adjustment:

(2)
(a) *They caught him out of the room.
(b) *They killed him out of the room.
(c) *They described him out of the room.
(d) *They stole him out of the room.

-The answer lies in a correct understanding of the way internal and external constraints license *lexical-constructional subsumption*, i.e. the principle-regulated fusion of a lexical template into a higher-level constructional pattern.

External constraints on lexical-constructional subsumption

	ACTIVITY	ACCOMPLISHMENT
RESULTATIVE	*John was painting portraits*	*John painted a portrait*
EFFECTUAL	*Sheriffs in this county will kill people*	*The sheriff killed the gunman*
EXPERIENTIAL	*He was listening to music*	*He listened to our song*
COMMUNICATIVE	*The boss kept yelling at him*	*The boss scolded him twice*

Table 1. A typology of object types within different mode of action categories

Grammatical phenomenon	**Example**	**Metaphor**
Change of transitivity type	*He talked me into business*	COMMUNICATIVE ACTION IS EXPERIENTIAL ACTION
Nominalization	*We couldn't prevent the destruction of the town by the enemy*	EVENTS ARE OBJECTS
Conversion of a verb into an idiomatic phrase	*They gave the thug a big beating*	ACTIONS ARE TRANSFERS
Use of the object construction to express states	*She has a lot of fear*	STATES ARE POSSESSIONS

Table 2. High-level metaphor in grammar

Grammatical phenomenon	**Example**	**Metonymy**
Categorial conversion	*He hammered the nail into the wall*	INSTRUMENT FOR ACTION
Subcategorial conversion	*There is a lot of America in what she does; There were three Johns at the party*	AN ENTITY FOR ONE OF ITS PROPERTIES; AN INDIVIDUAL ENTITY FOR A COLLECTION INCLUDING THAT ENTITY
Enriched composition (Jackendoff 1997: 61)	*She enjoyed/began the dance*	AN OBJECT FOR AN ACTION IN WHICH THE OBJECT IS INVOLVED
Parametrization	*This week, he'll do the carpet and I'll do the dishes*	GENERIC FOR SPECIFIC

Table 3. High-level metonymy in grammar

- Some cases of lexical-constructional subsumption are constrained by high-level metaphor/metonymy.

- First, let us see why it is possible to convert 'laugh at ' into 'laugh'. The constructional requirement is to find a causative accomplishment predicate that will initiate the causal chain that results in the object of the action moving from one location to another.
- Since 'laugh' is an activity predicate, without any causal and resultative component, the only way to make it part of the caused-motion construction is by reinterpreting the activity predicate as if it were a causative accomplishment predicate.
- This reinterpretation process is metaphorical and it crucially hinges upon the correlation between two kinds of actor and two kinds of object. In the case of causative accomplishments, the actor and object are what we may call an *effector* and and *effectee*, i.e. an actor whose action has a direct impact and subsequent effects on the object. In the case of activities, the actor is a mere "doer" of the action that is experienced by the object. This observation suggests an analysis of the subcategorial conversion process experienced by "laugh" in terms of *source* and *target* domain correspondences, of the kind proposed by Lakoff (1993) for conceptual metaphor within the context of Cognitive Linguistics (CL).

SOURCE		**TARGET**
Effector	←=→	actor
Effectee	←=→	goal/experiencer
Effecting	←=→	acting
Instrument	←=→	ø
Purpose	←=→	purpose

Table 4. AN EXPERIENTIAL ACTION IS AN EFFECTUAL ACTION

- The high-level metaphor AN EXPERIENTIAL ACTION IS AN EFFECTUAL ACTION imposes positive and negative constraints on lexical-constructional subsumption. On the positive side, the metaphor opens the door to a number of subcategorial conversions of predicates that can be classified as "experiential actions". This is the case of the predicates 'listen', 'wink', and 'wave', among many others, all of which have an experiential goal, which, in their default syntactic expression, are marked by a preposition ('listen to', 'wink at', 'wave at'):

(3)
(a) Finally, I felt like I was being listened into existence.
(b) She winked her away through Picadilly.
(c) She waved me into the kitchen.

- But there are also negative constraints that filter out impossible expressions even if we are working with experiential actions. Consider:

(4)
(a) *They laughed him out of the room with laughter (but cf. with a hearty guffaw, which specifies manner).
(b) *John laughed him out of the room with his mouth and lips.

It is not possible to make use of the instrumental role in the metaphor since experiential actions, unlike effectual actions, do not have such an element.
The instrumental role is discarded from the mapping by the application of the *Extended Invariance Principle* (EIP). The EIP was first proposed by Ruiz de Mendoza (1998) as a development to all kinds of generic-level structure of Lakoff's *Invariance Principle*, which was restricted to topological or image-schematic structure. The EIP stipulates that the generic-level structure of the target domain of a metaphoric mapping has to be preserved in

a way that is consistent with the corresponding structure of the source. This means that we cannot do violence to the 'experiential action' domain by forcing an instrumental role into it.

- The metaphor also rules out expressions with activity predicates that cannot take an object, as in (5) below, or those where the object is not an experiencer, as in (6):

(5) *Sharon shivered me into the room.
(6) *My mother dressed me into the room.

This metaphorical constraint happens by virtue of the activity of the Correlation Principle (CP) (Ruiz de Mendoza and Santibañez, 2003), which is active in the selection of the best possible source domain in terms of the implicational structure of the target. For example, in ARGUMENT IS WAR, an extremely intense debate between opposing political candidates may appropriately be described as an "all-out war" rather than just a skirmish. In the case of AN EXPERIENTIAL ACTION IS AN EFFECTUAL ACTION, both effectors and effectees are appropriate correlates for experiential actors and goals for two reasons: (i) the two pairs of roles stand in an actor-goal relationship; (ii) if we want to preserve the "coerced" meaning implications of the target domain when the lexical template is built into the caused-motion construction, effectors and effectees are the best possible source elements since the caused-motion construction requires literal force applied to an object. In the metaphor we understand the actor and goal of an experiential action as if they were the material doer and object of an effectual action (i.e. an action that has a direct physical effect on the object).

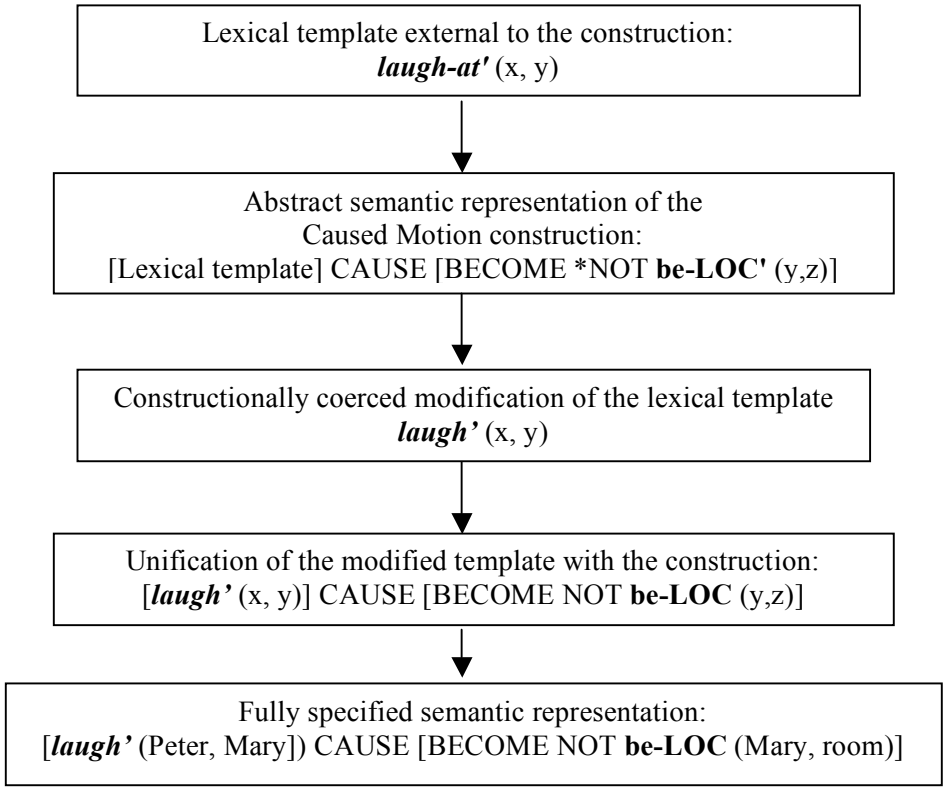


Figure 1: Simplified representation of a case of Peter laughed Mary out of the room

- There are other high-level metaphors that constrain lexical-constructional subsumption:

(7)

(a) *He talked me into it*, 'talk someone (into)' => based on the metaphor COMMUNICATIVE ACTION IS EFFECTUAL ACTION, which licenses a

subcategorial conversion process whereby the receiver of the message is seen as if directly affected by the action of talking rather than as the goal of the message.
(b) *He drank himself into a stupor* => the metaphor AN ACTIVITY IS AN (EFFECTUAL) ACTION allows us to interpret the originally intransitive predicate 'drink' in terms of a transitive structure of the actor-object kind (in the example, the object is reflexive).
(c) *Peter loved Mary back into life* => AN EMOTIONAL STATE IS AN EFFECTUAL ACTION. The predicate 'love' is what Halliday has called a mental process predicate, which, in his terminology, has two associated roles, a sensor and an object of sensing (i.e. a phenomenon). In this example the sensor is treated as an effector and the phenomenon as an effectee.

- The constraining power of high-level metonymy on grammatical arrangement has been discussed in some detail in Ruiz de Mendoza and Pérez (2001) and Ruiz de Mendoza and Mairal (2007). Here we will just address a few relevant facts. Compare the following sentences:

(8) a. The door closed (easily)
b. The bread cut easily/well.
c. *The bread cut.

(9) a. This new machine sews nicely.
b. This soap powder washes whiter.

- Example (8a) is a case of the *inchoative* construction, which, as is well known from the literature, alternates with the causative construction (cf. *Someone closed the door*). The inchoative construction is very similar to the *middle* construction, exemplified by (8b), with only one crucial distinguishing property: in the middle construction there is an evaluative element, which is obligatory, as is evidenced by the impossibility of (8c). In the inchoative construction the evaluative element is optional.
- The sentences in (9), in turn, illustrate the *characteristic property of instrument* construction (Levin, 1993), which we prefer to label, following Ruiz de Mendoza and Peña (2006), *instrument-subject evaluative*. Ruiz de Mendoza and Mairal (2007) give a unified account of the semantic motivation for these three constructions on the basis of two related high-level metonymies: PROCESS FOR ACTION and PROCESS FOR ACTION FOR RESULT. The inchoative construction is grounded in the PROCESS FOR ACTION metonymy. The metonymy allows us to retrieve the implicit agent of the inchoative construction, a situation that is impossible in the case of non-inchoative processes:

(10) The sheriff died (of a heart attack)

In (10) the sheriff's dying does not stand for someone willfully causing his death. Note that in order to have this situation we need to make use of a metaphor, as in (11), where the cause of a natural process is seen as if it were an intentional agent:

(11) A heart attack killed the sheriff.

- Furthermore, for the high-level metonymy PROCESS FOR ACTION to be applicable to a verbal predicate, the predicate needs to fulfill a number of conditions: there must be implicit agentive, instrumental, purposive, and beneficiary roles that are retrievable only through the metonymic operation:

(12) (a) *The door closed by John (cf. John closed the door).
(b) *The door closed with his left hand (cf. John closed the door with his left hand).
(c) *The door closed to start the experiment (cf. The experimenter closed the door to start the experiment).
(d) *The door closed for me (cf. John closed the door for me).

- The impossibility of these examples is to be found in the violation of the EIP, which in its application to metonymy preserves the high-level configuration of domain internal relationships. Evidently, the EIP does not allow us to include in the source the roles mentioned above, which are specific to the target.
- The middle and instrument-subject evaluative constructions add an evaluative ingredient that may affect either the process or the result components of the PROCESS FOR ACTION FOR RESULT metonymy. Thus, in *The bread cut easily* and *This new machine sews nicely*, it is the process that is assessed, as revealed by the paraphrases:

(13) (a) It was easy to cut the bread.
(b) It is nice to sew with this new machine.

- The paraphrases are not possible in the case of *The bread cut well* and *This soap powder washes whiter*, since in these examples it is not the process but the result that is assessed:

(14) (a) *It was well to cut the bread.
(b) *It is whiter to wash with this soap powder.

- This observation suggests that we have two different exploitations of the same high-level metonymic chain. In one of them, special focus falls on the initial source domain (the process); in the other, it is the final target domain (the result) that is particularly highlighted. The difference in focus is to be added to the other factors mentioned above to account for the ability of the two related high-level metonymies to set external constraints on lexical-constructional subsumption and to account for the range of interpretative possibilities of each construction with its variants.

Internal constraints on lexical-constructional subsumption

These constraints act on the internal semantic make-up of the lexical and constructional templates.

1. Full matching. There must be full identification of variables, subevents, and operators between the LT and the CT: 'break' can take part in the effectual variety of the transitive construction because it shares with the construction the relevant elements of structure, i.e. an effectual action that causes a change of state.

[[**do´** (x, [**use´** (x, y)] *CAUSE* [**do´** (y, Ø)] CAUSE [BECOME/INGR **pred´** (z)]

[[**do´** (x, Ø)]] CAUSE [BECOME/INGR **pred´** (z)]

Figure 2. Full matching between a causative accomplishment predicate and the effectual variety of the transitive construction

2. Event identification condition. It concerns the proper identification of events. The semantic configuration of the construction must be a proper subevent of the canonical lexical template. E.g. the *conative construction*, which imposes the presence of either a motion or a contact subevent. Accordingly, contact-by-impact verbs such as *hit* are compatible with a conative construction since a motion subevent is easily identified [**move.toward´** (x, y)]

[$Instr_1$, Involv <Manner> & <Purp>] [[**do´** (w, x)] CAUSE [**do´** (x, [**move.toward´** (x, y)]

Aktionsart representations can act as filters for certain cases of lexical-constructional subsumption. Following Cortés (2007), we note that the causative/inchoative alternation occurs with pure change of state predicates, which signifies that either a telic accomplishment or achievement can be compatible with the semantics of the inchoative construction, while this is not the case with states, activities, their corresponding causatives, and active accomplishments.

break: a causative accomplishment predicate

break: **do'** (x, ∅) CAUSE [BECOME *broken* (y)]

[$Caus_1Fact_1$] [BECOME/ INGR **pred'** (x)] 1= x

We cannot subsume a state lexical template into an inchoative constructional template. The implicit causative parameter together with the dynamic telic event structure as encoded in the constructional template do not have a corresponding analogue in the state lexical template for *see*; hence lexical-constructional subsumption is not feasible:

The lexical template for *see*: *** *** **see'** (x,y)

The constructional template: [$Caus_1Fact_1$] [BECOME/ INGR **pred'** (x)] 1= x

In causative states, the implicit causative parameter of the constructional template finds a corresponding analogue in the causative operator of the lexical template, but the BECOME /INGR constructional operators, which signal the telic nature of the construction, are not compatible with anything in the lexical template since we are dealing with a state predicate, which is atelic and unbounded:

do' (x, ∅) CAUSE [**feel'** (y, [**pred'**])]

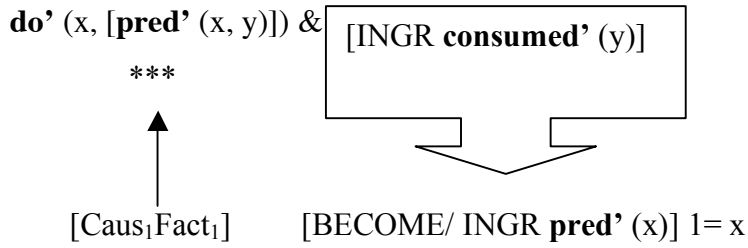
***

[$Caus_1Fact_1$] [BECOME/ INGR **pred'** (x)] 1= x

With active accomplishments (e.g. *eat*) we have two concatenated events, an activity which ends in a telic state:

do' (x, [*eat* (x, y)]) & INGR **consumed'** (y)

If we try to subsume the lexical template for *eat* into the inchoative constructional template we note that the ingressive, telic event is identified while this is not the case with the implicit causative parameter, which explains why subsumption is not possible with this type of predicates:



3. Lexical class constraint. It explains why *break* verbs can participate in the causative / inchoative alternation, while this is not the case with *destroy* verbs. If we look at their lexical representations below, there is nothing that should prevent them from participating in this alternation. But this is not really the case with *break* verbs, which do take part in the alternation.

(15) a. **do'** (x, 0) CAUSE [BECOME **broken** (y)]
b. **do'** (x, 0) CAUSE [BECOME **destroyed** (y)]

Then, why is it possible to generate this construction from (15a) and not from (15b)? The reason lies in the fact that the lexical template for *destroy* verbs is further modified by the primitive BECOME NOT **exist'** and the lexical function **RealLiqu**$_{12}$ which expresses the idea that someone carries out an action such that an entity does not longer exist. This means that *destroy* verbs are not verbs of change of state but verbs of existence and therefore are incompatible with the semantics imposed by the construction itself:

[**RealLiqu**$_{12}$] **do'** (x, 0) CAUSE [BECOME NOT **exist'** (y)]

4. Lexical blocking. One of the components of the lexical template can block the unification with a certain construction given that this component is a suppletive form; e.g. *kill*: this predicate does not take part in the causative/inchoative alternation since its inchoative form is suppletive, i.e. *die*, and blocks out a potential inchoative form of *kill*.

5. Predicate-argument conditioning. Sometimes the lexical template can place restrictions on the kind of instantiating element that we can have for a constructional argument. Thus, in, the caused-motion construction we have a basic constructional structure of the X-pred-Y(=NP)-Z(=PP) type. In principle, the constructional template can take any verb participant role to instantiate the Y element, which can be either human or non-human (e.g. *Jim pushed her into the room*; *Denise blew the dry leaf off the tree stump*). However, once the predicate and PP slots have been filled in, this choice constrains the kind of Y element that we can have. For example, in *She drove me into a depression*, the Y element has been realized by a human verb role; we cannot have a non-human element (cf. **She drove the gnat/the cobble-stone into a depression*).

6. Internal variable conditioning. The internal predicate variables place constraints on the nature of both the predicate and constructional arguments. A clear example is supplied by the use of the verb 'drive' to instantiate the caused-motion construction. The lexical template of 'drive' contains an indication of loss of control for the object. Because of this, there is a tendency for the Z element to be axiologically negative and have frequent instantiations such as the following: *desperation*, *panic*, *madness*, *frenzy*, *depression*, *apathy*, *rage*, *terror*, etc. Realizations with words like *peace*, *bliss*, *delight*, and *happiness* may occur only in contexts where lack of control is felt to be positive

(e.g. *I hear music that drives me into melancholy, or happiness*). The same principle, within the context of the *subjective transitive construction* (cf. Gonzálvez-García, 2003, 2006, fc), accounts for nature of the XPCOM or depictive element, which is necessarily evaluative, as a by-product of a subjective evaluative judgment. The constraining activity of the principle is thus further illustrated in the following pair extracted from Gonzálvez-García (2007:19):

(16)
(a) #I know you must think me the man who is standing over there
(b) 'I know you must think me awful' (BNC CDE 861)

External and internal constraints on constructional subsumption

- Constructional subsumption involving low-level or high-level situational models is a matter of parametrization, which is but the higher-level correlate of full matching in level 1 subsumption processes:

(17) Can you do the laundry, please?

- Since 'do' stands for 'wash' (cf. Ruiz de Mendoza and Pérez, 2001), the expression can be classified as an active accomplishment from an *aktionsart* perspective.
- The *Can You X, Please?* construction is fully compatible with *aktionsart* characterizations containing a **do'** primitive, such as activities and active accomplishments.
- This observation strongly suggests that subsumption at this level takes place in compliance with conceptual compatibility principles similar to full matching, which are internal to the process.
- The rest of the internal constraints operating at level 1 do not have correlates at levels 2,3, and 4, simply because of the different nature of constructions at these levels, which, as we have seen, make extensive use of idiomatic configurations.
- There are also external principles at work. Thus, we observe that the *Can You X, Please* construction is not possible with states, as evidenced by the examples in (18), and that it can only be operational in the case of (non-active) accomplishments through heavy constructional coercion, as seen from the oddity of the examples in (19):

(18)
(a) *Can you own a car, please?
(b) *Can you be tall, please?
(c) *Can you fall ill, please?

(19)
(a) #Can you learn Mathematics, please?
(b) #*Can you blush, please?
(c) #*Can you die, please?

- Example (19a) is less odd than (19b) and (19c) because its is more sensitive to constructional coercion: it is easier to think of a person actively doing something that will result in his learning Mathematics, but it is not clear how we can construe blushing or dying as controllable in a comparable way.
- In any case, what a sentence like (19a) conveys is the idea that learning Mathematics can be a construed as the result of a controlled activity, which suggests a high-level metonymic operation: the result of an action (as captured by the *aktionsart* specification **BECOME predicate'** for accomplishments) can stand for the action itself, thus yielding the metonymy

RESULT FOR ACTION (cf. Panther and Thornburg, 2000; Brdar & Brdar-Szabó, 2003). The metonymy licenses the possibility of saying (19a), but not (19b) and (19c) in standard contexts.

- The RESULT FOR ACTION metonymy does not apply to all cases of stative predicates expressing resultant states. Thus, it is possible to say *Be happy*, but #*Fall asleep* is certainly odd. However, their negative counterparts (*Don't be so happy*, *Don't fall asleep*) may be possible. The reason for these asymmetries lies in the degree of difficulty that activating RESULT FOR ACTION may have depending on the degree of control that the participant has over the situation in question. Thus, #*Fall asleep* is a strange instruction because the expression denotes lack of control, which clashes with the nature of the metonymic target (actions are controlled states of affairs). On the other hand, it is possible to act in such a way that one will not fall asleep, which seems to be fully compatible with the expression *Don't fall asleep*.
- In our view, this account has at least two advantages:

  (i) It provides us with a plausible (high-level) metonymic constraint on coercion of non-actional predicates in constructions typically requiring an action predicate.
  (ii) It spells out the full range of meaning implications derived through coercion at any level of description:

  Don't fall asleep = 'act in such a way that as a result you will avoid falling asleep'.

  Can you learn Mathematics, please? = 'act in such a way that as a result you will learn Mathematics'.

- What this account cannot do is give a principled explanation of why sometimes the RESULT FOR ACTION metonymy cannot license constructional coercion of non-actional predicates, as is the case of #*Fall asleep* and **Can you blush, please?* The solution to this problem comes from the Extended Invariance Principle: for the RESULT FOR ACTION metonymy to take place, it is necessary to preserve the generic-structure (i.e. the high-level) configuration of the result-action relationship; there must be a dynamic state of affairs under the control of an agent, whose action leads to a resultant state. For example, the instruction *Be happy* makes sense since it is possible for a person to act in such a way that he will control the conditions that make him feel happy. In contrast, the control condition is hardly possible in the case of falling asleep. Additionally, in connection to the Correlation Principle, we may wonder if the predicate 'happy' can count as the best possible source for such a controlled action. This has to be assessed in terms of the implicational structure of the action in question, which, in our example, requires an agent performing a controlled action that will create conditions for happiness. Contrast this situation with **Be tired*, which is highly odd. We cannot think of an agent involved in creating conditions of 'tiredness'. This makes 'being tired' an extremely poor source domain for any potential action target.

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Appendix I

A sample of the lexical architecture of the domain of COGNITION
(cf. Faber & Mairal, 1999)

6. Mental perception (to become aware through your mind) (know)
- 6.1. To become aware of sth, (having it) in one's mind [*know*]
  - 6.1.1. To come to know sth [*learn*]
    - 6.1.1a. To cause sb to learn [*teach*]
    - 6.1.1b. To cause sth to be known [*show*]
  - 6.1.2. To know the nature/meaning of sth [*understand*]
    - 6.1.2a. To cause sb to understand sth [*enlighten, illuminate*]
    - 6.1.2b. To cause sth to be understood better [*clarify*]
    - 6.1.2.1. To understand with difficulty [*grasp*]
    - 6.1.2.2. To not understand [*mistake*]
      - 6.1.2.2a. To cause sb not to understand/ understand with difficulty
- 6.2. To use one's mind to become (more) aware of sth in a certain way [*think about*]
  - 6.2.1. To think about sth bringing it back into one's mind from the past [*remember*]
  - 6.2.2. To think about sth that has happened in the past [*reflect*]
  - 6.2.3. To think about sth (usu. in order to understand it better [*meditate]*
  - 6.2.4. To think about sth in order to make a decision (in the future) [*consider*]
- 6.3. To use one's mind to form an opinion/idea [*think (of)*]
  - 6.3.1. To think sth, having formed an opinion/come to a decision about it [*decide*]
  - 6.3.2. To think sth is true [*believe*]
  - 6.3.3. To think sth is going to happen [*expect*]
  - 6.3.4. To think sth is likely to be true [*suppose*]
  - 6.3.5. To think without knowing if it is true [*guess*]
  - 6.3.6. To think sth may not be true [*doubt*]
  - 6.3.7. To think (of) sth, forming it in your mind as an idea/picture [*imagine*]

Appendix II

The internal architecture of a lexical subdomain (cf. Faber & Mairal, 1999)

TO CAUSE SOMEBODY TO FEEL FEAR [frighten, terrify]

frighten: to cause somebody to feel fear/be afraid (the unpleasant, strong feeling caused by the presence or expectation of danger).

scare: to frighten somebody in a sudden way.

alarm: to frighten somebody, making them feel anxious about something unpleasant or dangerous in the future.

intimidate: to frighten somebody so that they do what you want them to do.

panic: to frighten somebody so suddenly that it makes them unable to act sensibly or think clearly.

terrify: to cause somebody to feel terrified (extreme fear because they think they might be killed).

terrorize: to terrify somebody deliberately over a long period of time by threats or acts of violence.

petrify: to terrify somebody, especially so that they are motionless.

Appendix III

List of semantic primes in Wierzbicka's NSM

Grammatical category	Wierzbicka's Semantic Primitives
nouns	I, YOU, SOMEONE, PEOPLE, SOMETHING, BODY
determiners	THIS, THE SAME, OTHER
quantifiers	ONE, TWO, SOME, ALL, MANY/MUCH
evaluators	GOOD, BAD
descriptors	BIG, SMALL, (LONG)
intensifier	VERY
mental predicates	THINK, KNOW, WANT, FEEL, SEE, HEAR
speech	SAY, WORD, TRUE
actions, events and movement	DO, HAPPEN, MOVE
existence and possession	THERE IS, HAVE
life and death	LIVE, DIE
time	WHEN/TIME, NOW, BEFORE, AFTER, A LONG TIME, A SHORT TIME, FOR SOME TIME, MOMENT
space	WHERE/PLACE, HERE, ABOVE, BELOW; FAR, NEAR; SIDE, INSIDE; TOUCHING
"logical" concepts	NOT, MAYBE, CAN, BECAUSE, IF
augmentor:	MORE
taxonomy, partonomy	KIND OF, PART OF;
similarity	LIKE

Appendix IV

List of Lexical Functions

Lexical Function	Definition
Some ECL Lexical Functions (adapted to paradigmatic structure)	
ANTI	Antonym. This LF also combines with other LFs to negate them.
BON	Good (expression of praise)
CAUS	Cause
CONT	Continuity/duration
CULM	The highest point of []
DEGRAD	To get worse
FACT	Be realized
INCEP	The beginning of []
INSTR	Instrument
INVOLV	Subactivities implied by the predicate
LOC_{ad}	Spatial location with directionality "to"
LOC_{in}	Spatial location with directionality "in"
LOC^{temp}	Temporal location which can have arrows marking past ($\leftarrow$), present ($\leftrightarrow$) or future ().
MAGN	intense(ly), very [intensifier], to a very high degree
MINUS	less of []
OBSTR	to function with difficulty
PERM	permit
PLUS	more of
SYMPT	physical symptoms
Some additional functions	
EFF	effort
POSS	possibility
PROB	probability
PURP	purpose

Appendix V

Lexical templates (Mairal & Faber, 2007; Ruiz de Mendoza & Mairal, 2007b)

fathom:	[MAGNOBSTR & $\text{CULM}_{12[\text{INTENT}]}$] **know'** (x, y)
realize:	[INSTR $(\text{see})_{1,2}\text{LOC}_{\text{IN}}$ (BODY_PART: mind& $\text{CULM}_{1,2[\text{all}]}$] **know'** (x, y) x = 1; y = 2
grasp:	[OBSTR & $\text{CULM}_{1,2\ [\text{all}]}$] **know'** (x, y)
explain:	[INSTR $(\text{say})_{1,2,3}$ & $\text{CULM}_{1,2[\text{all}]}$] do' (x, Ø) CAUSE [BECOME **know'** (y,z)] x = 1; y = 2; z = 3
study:	[PurpMagn$(\text{know})_{12}$ & $\text{Loc}_{\text{in}}{}^{\text{temp}\leftrightarrow}{}_{12}$ Cont] **think'** (x, y) x = 1 and y = 2
consider:	[$\text{LOC}_{\text{in}}{}^{\text{temp}\leftrightarrow}{}_{1,2}$ CONT] **think'** (x, y)
consider:	[CONTPURP(POSS(do))$_{1,2}$ $\text{LOC}_{\text{in}}{}^{\text{temp}\rightarrow}$] **think'** (x, y)
reminisce:	[Involv$(\text{say})_{12}\text{Sympt}_1$ (feeling_type: pleasure)] **think'** (x, y) x = 1 and y = 2
order:	<$\text{MAGN}_{1[\text{PERM}]23}$,$\text{PURP}_2$ $(\text{do})_3$> [**do'** (x, [**say**' (x,y)])] CAUSE [**do'** (y,z)]
command:	$\text{LOC}^{\text{soc}\uparrow}{}_{(1)}$ (PLACE_TYPE: political/military) [order]
enjoin:	$\text{LOC}^{\text{soc}\uparrow}{}_{(1)}$ (PLACE_TYPE religious) [order]

Appendix VI

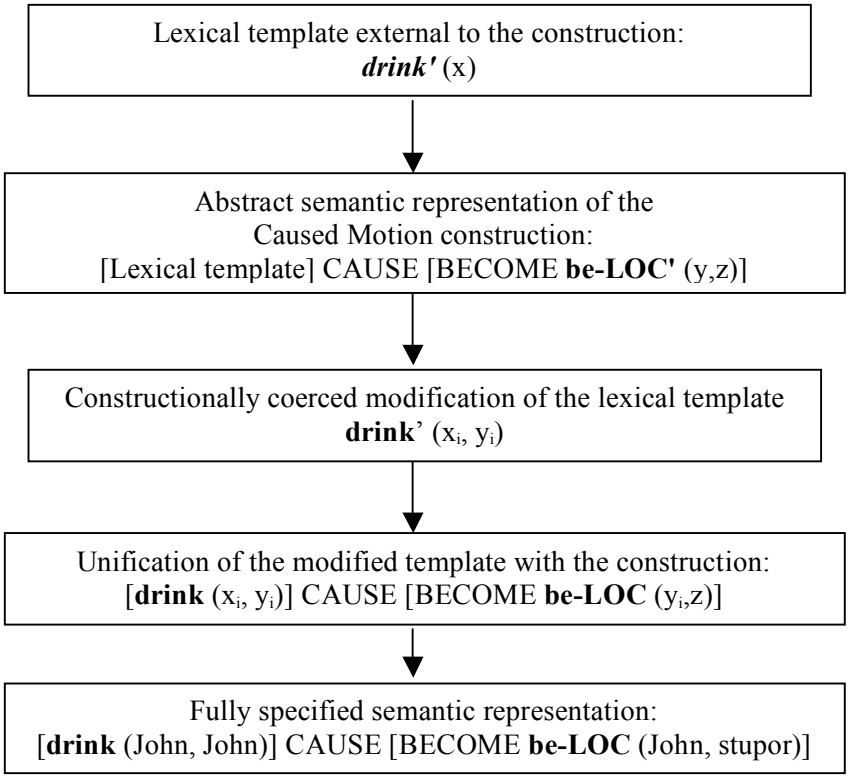

Fig. 1. Simplified representation of lexical-constructional subsumption in *John drank himself into a stupor*

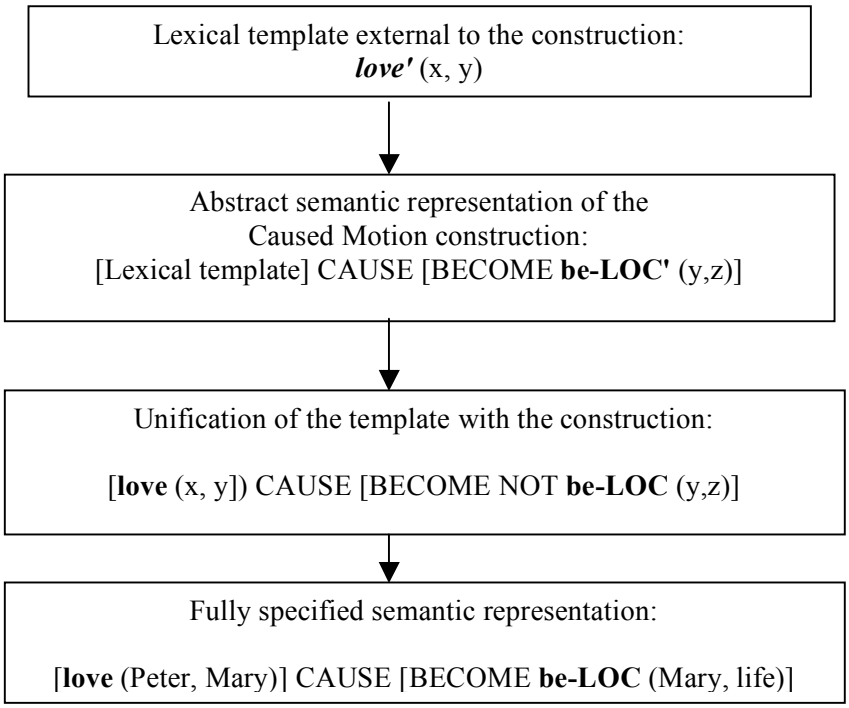

Fig. 2. Simplified representation of lexical-constructional subsumption in *Peter loved Mary back into life*

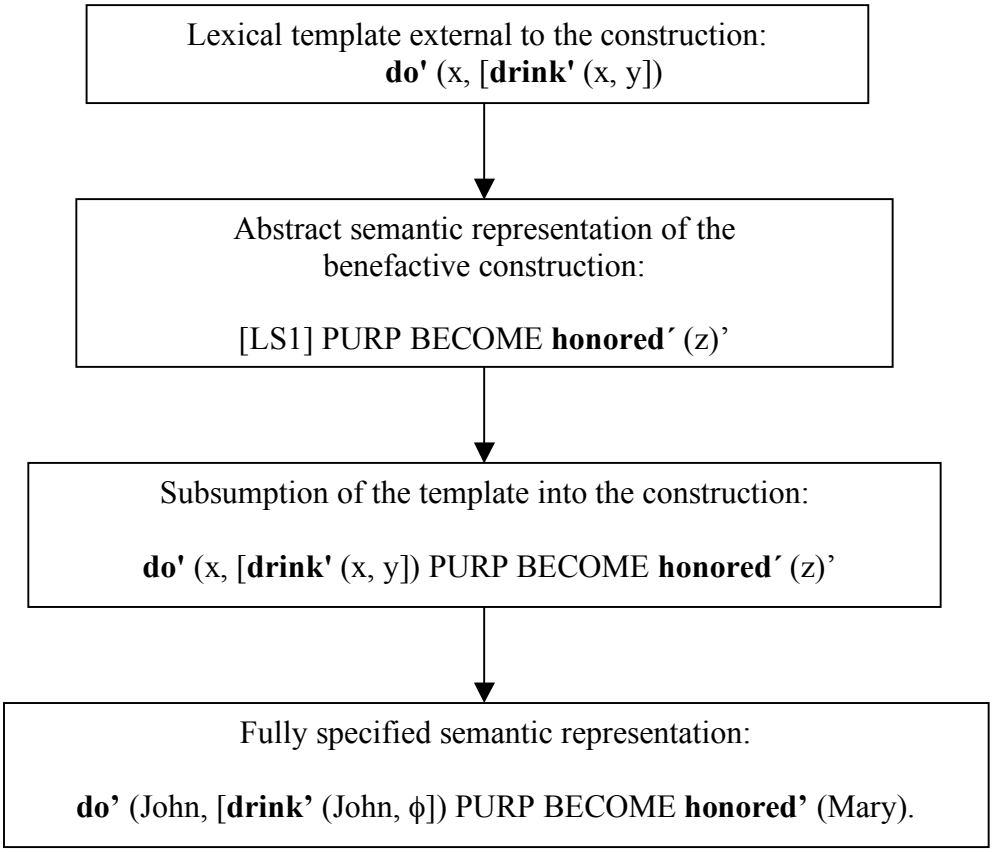

Fig. 3. Simplified representation of lexical-constructional subsumption in *John drank to Mary.*

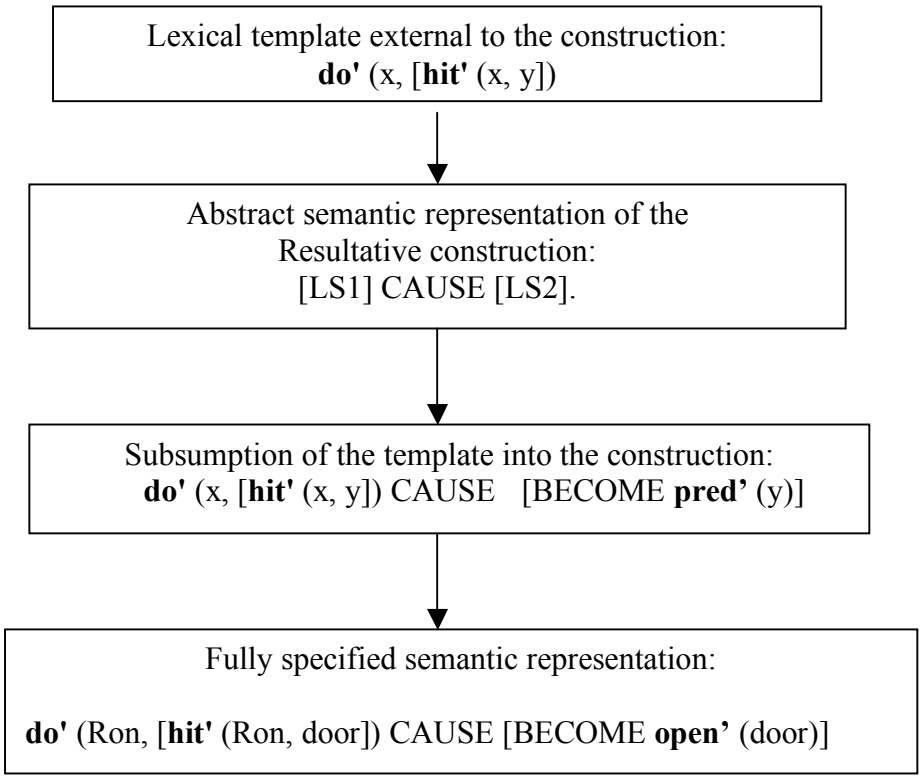

Fig. 2. Simplified representation of lexical constructional subsumption in *Ron hit the door open*.