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# Constructions in Role and Reference Grammar

## The case of the English resultative\*

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Framed within Role and Reference Grammar, this chapter provides a finer-grained account of the English resultative constructions (e.g. *He hammered the metal flat/ into a knife*), which enriches the constructional schema suggested in Van Valin (2005). In so doing, we mainly follow the work carried out by Nolan (2011a, b) and Diedrichsen (2010, 2011), while also drawing on insights coming from the family of Construction Grammars (e.g. Goldberg 1995; Goldberg & Jackendoff 2004, *inter alios*). In turn, a further step is taken here by proposing the incorporation of additional features such as the motivation of the construction and its family resemblance connection; two essential issues which heavily depend upon the role of metaphor and metonymy (Ruiz de Mendoza & Mairal 2011).

### 1. Introduction

Role and Reference Grammar (hereafter RRG) is generally classified as a projectionist functional theory of language (Van Valin 2008, 2013).<sup>1</sup> However, the role of constructions (or “constructional templates/schemas” in RRG terminology) was acknowledged since its very beginning in Van Valin’s (1993: 110) work, where two senses of the term were explicitly distinguished: (1) as an abstract structure

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1. In fact, Butler (2009: 139–140) classifies RRG as a constructionist model, since for current RRG (from 2005 onwards) constructional schemas have a central role in the theoretical apparatus of the model as the recipients of those language-specific features that cannot be derived from the general principles of the grammar. Van Valin (2013) also presents the incorporation of the notion of co-composition (Pustejovsky 1995, 1998) into RRG, thus making it more constructionist.

accounting for the key characteristics of complex constructions, e.g. core coordination; (2) as language-specific realizations of the above-mentioned abstract constructions, e.g. core coordination in French.<sup>2</sup> Since this early, somehow tentative account, much has been written on constructions and constructional templates within RRG. Nevertheless, the study of the latter has never been found among the essential RRG topics, but rather relegated to a few oft-quoted examples such as the English passive, the Sama antipassive and reflexivization, and the English and Sama wh-question formation, among others (cf. Van Valin & LaPolla 1997:433–436; Van Valin 2005:132–135).

The object of this chapter is to present an RRG account of one of the most widely studied constructions: the English resultative. In order to provide a finer-nuanced description of the resultative than the one currently posited by Van Valin (2005:239), our study mainly draws on the work on constructional schemas recently carried out by some RRG scholars (i.e. Cortés 2009; Diedrichsen 2010, 2011; Nolan 2011a, b; Van Valin 2011, 2013, *inter alios*). Additionally, it also takes into consideration part of the semantic and syntactic analyses developed within the family of Construction Grammars (CxG(s)) by González-García (2009, 2011), Goldberg (1995), Goldberg and Jackendoff (2004), and Luzondo (2011), to name but a few, and some of the insights from the Lexical Constructional Model (LCM; Ruiz de Mendoza & Mairal 2008, 2011; Mairal & Ruiz de Mendoza 2009; see Butler 2009 for a critical overview).

The structure of this chapter is as follows. In Section (2), a brief overview of the status of the notion of construction throughout RRG in general, and the account of the resultative construction in particular, is furnished. Section (3) presents a preliminary proposal of an RRG constructional schema for the property English resultative (e.g. *The blacksmith hammered the metal flat*), which enhances its constructional meaning and its relation with verb meaning. We sustain, with Diedrichsen (2010, 2011) and Nolan (2011a, b), that RRG schemas should become more *constructional* and incorporate, among others, the construction signature, its constraints, its workspace, and its input and output strings. Furthermore, due to the fundamental role played by metaphor and metonymy in order to explain the data under scrutiny, we advance the addition of two new features to the proposed English resultative schema, namely, the motivation of the construction and the family resemblance connection. This stance on enriching RRG constructional

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2. As Van Valin and LaPolla (1997: Footnote 33, Chapter 2 and Footnote 37, Chapter 7) accurately clarify, the term *constructional template* is employed in RRG in the same sense as the concept *construction* is used by Construction Grammar (CxG), that is, to refer to the theoretical representation of the properties of the forms of a language. However, the term *construction* is utilized in RRG for the forms themselves, to which CxG typically refers as *construct*.

schemas has immediate and direct consequences for our second goal in this work: what are the connections that the property English resultative establishes with the motion resultative construction (e.g. *He hammered the metal into the shape of a heart*), which we also posit could further be extended to other closely related constructions such as the caused-motion and the *way* construction, etc. Section (4) explores this particularly interesting issue that still remains open in RRG (Van Valin 2011) but where we believe the theoretical apparatus of the LCM, a model which already integrates RRG in its lexical descriptions, could shed some light on. Finally, Section (5) offers some concluding remarks.

## 2. A brief overview of the status of *constructions* within RRG: The case of the resultative

As early as Van Valin (1993), the notion of *construction* –employed as a synonym of *grammatical construction*–, finds its place within RRG. In particular, according to Van Valin (1993: 110) RRG:

falls between GB [Government and Binding] theory, on the one hand, which specifically denies the validity of the notion of grammatical construction (Chomsky 1988), and Fillmorean Construction Grammar (Fillmore 1988), on the other hand, in which only language-specific construction templates are posited.

This stance explains that constructions were employed both when referring to abstract complex constructions such as nuclear juncture, and to language-particular templates which instantiate those abstract constructions, e.g. nuclear juncture in French.

It is in Van Valin and LaPolla's (1997) groundbreaking work that the role of constructions starts to be fully acknowledged, moving closer to the proposals put forward by CxG (Fillmore, Kay & O'Connor 1988) than to the denial sustained by GB. It is also here that the term *constructional template* is first introduced in RRG. Particularly, RRG advocates that "grammatical structures are stored as *constructional templates*, each with a specific set of morphosyntactic, semantic and pragmatic properties" (Van Valin & LaPolla 1997: 73). However, unlike CxG(s), RRG also envisages *syntactic templates*, that is, a number of configurations that represent the syntactic structure of a particular language or layered structure of the clause and that are stored in what is called the *syntactic inventory*. Each syntactic template can be combined to form more complex structures and is filled with the lexical and grammatical elements that make up utterances.<sup>3</sup>

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3. Among others, the interested reader is referred to Van Valin and LaPolla (1997: 74) for a sample of different templates, to Van Valin (2005: 15) and Pavey (2010: 61) for the English syntactic inventory, and to González Vergara (2006: 122–126) for the Spanish inventory.

As for constructional templates, these are presented in the form of a table (Van Valin & LaPolla 1997: 430–436) that specifies the syntactic, morphological, semantic and pragmatic aspects unique to the construction under scrutiny. In other words, templates will not include information that can be derived from the general principles of the theory, such as the Actor-Undergoer Hierarchy. Table 1 reproduces the constructional template for the English *be*-passive given in Van Valin and LaPolla (1997: 433):

**Table 1.** The English *be*-passive constructional template

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CONSTRUCTION
English passive (plain)
SYNTAX
Template(s): Default core
PSA: Pragmatic pivot (default)
Linking Actor ≠ pragmatic pivot; omitted or in peripheral <i>by</i> -PP
Undergoer = pragmatic pivot (default)
MORPHOLOGY
Verb: past participle
Auxiliary: <i>be</i>
SEMANTICS
PSA is not instigator or state of affairs but is affected by it (default)
PRAGMATICS
Illocutionary force: Unspecified
Focus structure: No restrictions; pragmatic pivot = topic (default)

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This constructional template provides us with the following type of information:<sup>4</sup>

- a. Syntax: the syntactic template required is a core template and, since no constraints are included, its selection follows the Syntactic Template Selection Principle of the theory (Van Valin & LaPolla 1997: 324, revised on p. 569). The privileged syntactic argument (PSA) is the default pragmatic pivot in English (the traditional *subject*). As for the linking, the actor is not the PSA,

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4. Van Valin (2005: 132) presents a minimally different template, where reference is made to the specific principles that rule the selection of the syntactic template, the accessibility to PSA, and the linking of the actor and undergoer, following the PSA and argument modulation voice postulates of the theory. The morphological, semantic, and pragmatic features remain the same.

being omitted or in the periphery in a prepositional phase or PP headed by *by*, whereas the undergoer does function as PSA.<sup>5</sup>

- b. Morphology: the template specifies the form of the predicate: *be* + past participle.
- c. Semantics: a non-exhaustive characterization of the meaning of the English passive is provided.
- d. Pragmatics: no particular information about the construction's illocutionary force type and focus structure is recorded.

As Van Valin and LaPolla mention, the format employed for the constructional templates is not highly elaborated, since it is not intended to be a formalism, but rather a collection of the key properties of particular forms of a language:

[...] the characterizations of the various properties of the construction are not as formal as the syntactic, semantic and other representations they refer to; in particular, the specification of the general meaning of the construction is informal and is meant to express the semantic properties that would have to be captured by a more formal theory of constructional meaning. (Van Valin & LaPolla 1997:432)

As Sections 3 and 4 develop, it is our goal to enrich the semantic specifications that RRG constructional templates include. We do so inspired by the work carried out by construction grammarians like González-García (2009, 2011), Goldberg (1995), Godlberg and Jackendoff (2004), Luzondo (2011), and by LCM practitioners (Ruiz de Mendoza & Mairal 2007, 2008, 2011; Mairal & Ruiz de Mendoza 2009, among others), while employing the overall formalism for the representation of constructions proposed in Diedrichsen (2010, 2011) and Nolan (2011a, b).

In Van Valin (2005: 131), the term constructional template is replaced by *constructional schema*, but nothing is changed about its format or the type of information supplied. However, its status in RRG is now highlighted as a crucial element in the linking since schemas record vital specific details particular to a language or to a construction, such as the PSA, which are required in the semantics-to-syntax

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5. It is worth noting that constructional templates for complex sentences are slightly different from those for simple sentences such as the passive. Thus, they require the incorporation of new features like the juncture and nexus types, the construction type, the unit templates or the clause-linkage marker (see Van Valin & LaPolla 1997:521–522). As Table 2 displays, these features play a role in the description of the English resultative, which is a complex construction (Van Valin 2005:238–239).

linking as well as in the syntax-to-semantics linking.<sup>6</sup> Therefore, constructional schemas are incorporated for the first time in the general organization of the theory, as Figure 1 shows:

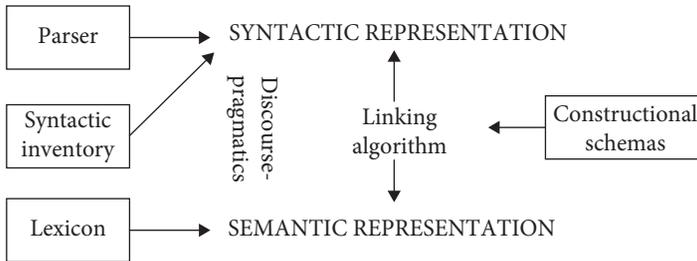


Figure 1. The architecture of RRG (Van Valin 2005: 134)

The resultative construction, to the best of our knowledge, is firstly mentioned to support the non-universality of grammatical relations as opposed to semantic roles like actor and undergoer (Van Valin 1993: 50–54). For instance, the resultative construction in Acehnese can only be explained in relation to the actor-undergoer contrast, since the omission of the clitic of the first verb is allowed if the arguments are undergoers.

Similar resultatives, i.e. the Mandarin Chinese complement constructions, are thoroughly discussed in Hansell (1993: 203–205), where widely-agreed distinguishing properties, such as nuclear juncture, the combination of an action verb and its result or achievement verb, or the relative order and the causality relationship between both verbs, are accounted for. Its constructional template is provided in Van Valin & LaPolla (1997: 531), where its syntactic, morphological, semantic and pragmatic properties are recorded.

As for the English resultative construction, which Boas (2003: 1) describes as “the state of an argument resulting from the action denoted by the verb” (e.g. *Tobias ate the bowl empty*), its study within RRG is first carried out along with the above-mentioned treatment of the Mandarin Chinese complement constructions in Van Valin and LaPolla (1997: 442–444, 529), although no constructional template is included. This is supplied in Van Valin (2005: 239) and reproduced in Table 2:

6. Kailuweit (2008: 198–200) integrates constructional schemas into the semantics-to-syntax linking algorithm, specifically he provides the pro-drop constructional schema and the schema for Spanish object clitics, detailing that, for the linking algorithm to be fulfilled, the information of these schemas would need to be retrieved and processed at point 3 of the so mentioned algorithm (cf. Van Valin 2005: 136).

**Table 2.** The English resultative constructional schema

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CONSTRUCTION: English resultative construction

SYNTAX:

Juncture: nuclear

Nexus: cosubordination

Construction type: serial verb

[<sub>CL</sub> [<sub>CORE</sub> NP [<sub>NUC</sub> [<sub>NUC1</sub> ...] NP [<sub>NUC2</sub> ...]]]], <sub>NUC2</sub> ≠ V

Unit template(s): (5.2)

PSA: none

Linking: default

MORPHOLOGY: none

SEMANTICS: [PRED<sub>NUC1</sub>] CAUSE [PRED<sub>NUC2</sub>], PRED<sub>NUC2</sub> [+static]

PRAGMATICS:

Illocutionary force: unspecified

Focus structure: unspecified

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Being the English resultative a complex construction, its schema incorporates a number of syntactic features that are not present in simple constructions (cf. Table 1 for the English passive). Among these, we can notice:

- a. The specification of the juncture and nexus types, which here corresponds to nuclear cosubordination.
- b. Its construction type, i.e. an abstract syntactic representation of the constituents of the construction. In this particular case, it follows the order of a serial verb construction in which the second NP, the undergoer, appears between the two nuclei, the second of which cannot be a verb ( $nuc2 \neq V$ ).
- c. Its unit template, that is, specifications of any particular feature of the core syntactic templates from the inventory of a language. For the English resultative, the unit template will be selected according to the syntactic template selection principles detailed at (5.2) in Van Valin (2005: 130).

As for the rest of information included in the schema, since there are no relevant morphological markers and the pragmatics is unspecified, the most remarkable feature has to do with the semantics of the construction. By means of the abstract configuration [PRED<sub>NUC1</sub>] CAUSE [PRED<sub>NUC2</sub>], the causative meaning the construction displays is captured, whereas the arrangement PRED<sub>NUC2</sub> [+static] explicitly specifies that the second nucleus must express a new resulting state.

Furthermore, Van Valin (2005: 239) supports the validity of the English resultative constructional schema in Table 2, since it provides an elegant explanation for Goldberg's (1995: 9) oft-quoted example *Chris sneezed the napkin off the table*. Even though the first nucleus is an intransitive verb (*sneeze*) and the second one a PP (*off the table*), the basic information contained in the schema can account for this example: there exists a first event that causes a static change in the second

one. The linking is then unproblematic, as *Chris* is selected for actor, *the napkin* for undergoer, and *off the table* as the PP marking the new result. Consequently,

[...] there is no reason to claim that *sneeze* has suddenly become transitive in this construction; because the arguments of the component logical structures are pooled to create a composite argument structure in a nuclear juncture, *the napkin* is an argument of the whole logical structure but not one of *sneeze*.

Therefore, Van Valin's viewpoint gives constructional schemas a more central and complex role in the grammar than they used to have because the arguments now need not be selected by the verb but by the construction, much in the line of what CxG(s) propose (especially, Goldberg 1995, 2005; Goldberg & Jackendoff 2004). However, nothing is said in RRG about where or how "the arguments of the component logical structures are pooled to create a composite argument structure" (*ibid.*) when there exists a mismatch between the argument positions in the logical structure (hereafter LS) of the verb and the arguments of the construction. It is true that Van Valin (2005: 161) envisages an area in the lexicon that he calls *workshop* where "the semantic representation of a sentence would be composed, based on the logical structure of the predicating element", but there is no reference to this place in the constructional schema. Thus, a constructionist approach is called upon to explain, among other things, the speaker's actual processing of syntax. As Diedrichsen (2011: 180) puts forward "an incremental, 'on-line' analysis of a syntactic structure requires an early projection of the emerging structure". Yet this is not fully attainable in RRG because, as already mentioned, constructions come into play only when general argument realization principles of the grammar fail.

Furthermore, the morphosyntactic and semantic information of Table 2 certainly needs to be enhanced to accommodate all the nuances the English resultative construction displays. In the following sections, we adopt a more constructionist approach where constructional schemas are regarded as highly elaborate "grammatical objects" (Nolan 2011b).

### 3. An RRG enriched constructional schema for the English resultative

Despite being only a (more or less) partially productive construction (cf. Goldberg & Jackendoff 2004; Boas 2005 for a discussion), the complexity of the resultative has generated a considerable number of studies from different perspectives, among which we may mention the work by authors such as Simpson (1983), Hoekstra (1988), Carrier and Randall (1992), Rappaport and Levin (2001), Levin (2006), Boas (2003), Broccias (2003), Goldberg (1995, 2001), Goldberg and Jackendoff (2004), Wechsler (2001), Iwata (2006), Peña (2009), Ruiz de Mendoza and Luzondo (2012), *inter alios*.

The resultative is a goal-oriented, telic transitivity pattern that designates the outcome of a change of state.<sup>7</sup> The result ingredient (BECOME *pred'* in RRG notation) may be realized by an Adjectival Phrase (AP), as in the oft-quoted example *The blacksmith hammered the metal flat*, or through figurative motion by a PP, e.g. *The teacher talked us into a stupor* (example taken from Goldberg & Jackendoff 2004: 536). We refer to the former case as the *property* resultative, and to the latter as the *motion* resultative. Collectively, they are labeled *the resultative*.

Verbs belonging to most *Aktionsart* classes can take part in this construction: (i) achievements: *The door popped open* (The Corpus of Contemporary American English, 2003; hereafter COCA); (ii) causative achievements: *A shot struck the canoe and shattered it to pieces* (Google Books American English Corpus, 2008; GBC hereafter); (iii) semelfactives: *Lightning flashed blindly bright* (COCA, 2011); (iv) accomplishments: *Fallingwater's waterfall froze solid* (COCA, 2003); (v) activities: *They ate themselves sick* (GBC, 1998); *He drank himself into a coma* (COCA, 2004), etc. Levin (1993: 101, our emphasis) claims that:

a wide range of verbs is found in the resultative construction, so no specific classes of verbs are identified here. However, there are also some clearly semantic constraints on the verbs found in the resultative construction: *stative verbs* and *directed motion verbs* are excluded.

Despite Levin's affirmation, state verbs can also participate in the resultative, as evidenced by the following realizations: *He loved her to distraction* (GBC, 1992), *I love you to bits* (GBC, 2002), *He loved us into being* (GBC, 2009) or *He loved her to pieces* (COCA, 2008). Besides, whereas some instances of the resultative may sometimes display an optional resultative element (e.g. (1a–c)), other cases require the presence of an object and the resultative AP/PP in order for the utterance to be grammatical (e.g. (2a–b)):

- (1)
  - a. I froze the ice cream (solid) (example taken from Iwata 2006: 471)
  - b. The river froze (solid) (GBC, 2006)
  - c. She bled (to death) (COCA, 2011)
- (2)
  - a. James ran \*(his feet sore) (example taken from Boas 2003: 120)
  - b. Sue swept \*(the broom to pieces) (example taken from Boas 2003: 7)

Likewise, the high variability of the construction in question is evidenced in the type of objects that the construction takes, which range from prototypical

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7. See Goldberg and Jackendoff (2004: 542) for a discussion on the issue of telicity in examples like *For hours the mixture got hotter and hotter* (i.e. the "A-er and A-er" AP pattern). According to these authors, such a pattern creates atelic resultatives.

patients (e.g. (3a)), going through metonymically exploited objects (e.g. (3c)), to realizations employing fake-reflexives (e.g. (3b)) or non-subcategorized objects (e.g. (3d)) whose inclusion renders the whole utterance figurative:

- (3) a. He hammered the metal flat/He hammered the hot iron into knives (COCA, 1991)
- b. The puppy barked himself hoarse (COCA, 1998)/We danced ourselves to death (GBC, 2008) (where a person does not “dance oneself” but rather dances to the music)
- c. Tobias ate his plate clean (where the plate stands for its contents) (example taken from Boas 2003: 113)
- d. Sue swept the broom to pieces (where one cannot actually “sweep a broom”)

To conclude this necessarily cursory overview of the resultative, we have yet to illustrate the intricate distribution of resultative phrases that may occur in post-verbal position (see Boas (2003) for more details on this issue), as well as the nature or type of possible object referents. Some examples are given in (4)–(6) below:

- (4) a. Mary ate herself {sick/silly/to death/??to sickness/?to fame/\*to pieces}
- b. Tobias ate the bowl {clean/empty/\*sick/\*silly/\*to death/\*to sickness/\*to pieces}
- (5) a. Jaime ran {his Adidas/?his socks/\*his headband/\*the pavement} threadbare
- b. Jaime ran {the pavement/\*his iPod} thin
- (6) Richard painted {the house/himself} {red/\*expensive}

At present, constructions under the scope of RRG bear some resemblance to the “lumper” approach (cf. González-García 2008: 350–351) put forward by Goldberg (1995), where argument structure constructions are abstract configurations (e.g. X CAUSES Y TO MOVE Z) that carry meaning independently of the lexical items (especially the verbs) that fill them in, also being capable of augmenting the valence of the verbs that fuse with them (e.g. *the napkin* and *off the table* are contributed by the construction in the caused-motion realization *Chris sneezed the napkin off the table*).<sup>8</sup> In other words, constructions supply meaning, as in (3a), where the resultative component (i.e. BECOME flat’) is not to be attributed to yet another implausible sense of the verb at hand. Additionally, in Goldberg’s (1995)

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8. See Goldberg (2006:5) for a definition of the notion of construction.

approach both general constraints (i.e. the ‘Semantic Coherence Principle’ and the ‘Correspondence Principle’; *ibid.*: 50) and construction-specific constraints (e.g. “only animate instigators are acceptable as subjects of two-argument resultative constructions”; *ibid.*: 193) are posited to delimit the fusion between the verb and the construction. Nevertheless, authors like Boas (2013) contend that Goldberg’s abstract meaningful configurations tend to overgenerate unattested sentences, since: (i) some of Goldberg’s constraints are insufficient to block out unacceptable examples; (ii) the rich information codified by the verb is merely reduced to a set of participant roles (e.g. *talk* ⟨**talker**⟩, *eat* ⟨**eater** eaten⟩).<sup>9</sup> By way of illustration, in Goldberg’s (1995) framework semantically related verbs like *talk*, *grumble* or *whisper* share an identical structure (i.e. *talk* ⟨**talker**⟩, *grumble* ⟨**grumbler**⟩, *whisper* ⟨**whisperer**⟩). However, whereas the first one can be successfully incorporated into the resultative, e.g. *Miriam talked herself blue in the face*, the other two are more problematic: ?*Miriam whispered herself blue in the face*, \**Miriam grumbled herself blue in the face* (examples and acceptability judgments taken from Boas 2008: 121). We thus concur with Boas’s claim that some of Goldberg’s constraints are insufficient to discard some ungrammatical utterances, while also being incapable of explaining why, for instance, *run* can collocate with a non-subcategorized object like *his Adidas* but not with *his headband* (cf. Example (5a)).<sup>10</sup>

To make room for a finer-grained analysis of the English resultative in RRG, we follow the line of research recently developed by Diedrichsen (2010, 2011) and Nolan (2011a, b). For these authors, constructional schemas should be viewed as full-fledged structured grammatical entities indispensable not only to the linking algorithm but to the very lexicon, as the LSs stored in the latter could be accessed and manipulated according to the constraints encoded in the schemas. Therefore, constructions will now be kept in a specific repository that establishes connections with the lexicon and the LSs when needed, as Figure 2 clearly depicts:

9. For Goldberg (1995:44), lexically profiled participants (i.e. those that appear in bold letters) are obligatorily accessed entities which “function as focal points within the scene, achieving a special degree of prominence”.

10. For example, Boas (2011:1273–1275) demonstrates that none of the four semantic constraints posited by Goldberg (1995:193–197) to regulate fusion processes within the AP resultative construction are capable of ruling out odd or apparently unacceptable sentences such as ?*Ed hammered the metal safe*.

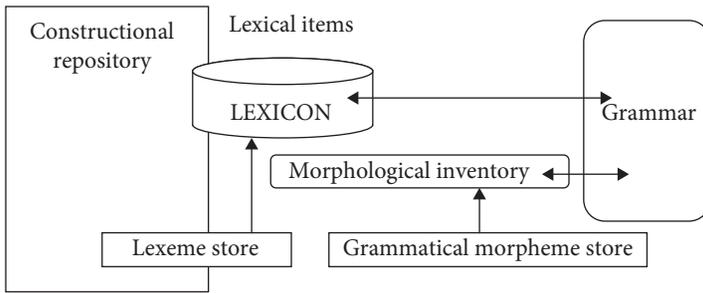


Figure 2. The construction repository and the lexicon in grammar (Nolan 2011b)

Below is a summary of the properties these new enriched constructions include (Diedrichsen 2010, 2011; Nolan 2011a, b):

1. The construction signature: this is the information that will identify the construction as unique among the others in the construction repository. It is expressed using morphosyntactic patterns of occurrence. Associated with the signature, a number of constraints are also contemplated so that over-generation is kept to a minimum.<sup>11</sup> Besides, the input and output sequences are acknowledged as key elements of the constructional schemas:

[...] a construction has an input. For example, from syntax, a clause is received for processing when the construction schema is activated following a schema retrieval based on the uniquely identifying signature match. Once the construction is activated and the various criteria at the syntax-semantics-pragmatics interfaces are applied within the construction in the tokens within the syntactic string, an output is generated. This will deliver, assuming a construction executing in the syntax-semantics direction, a rich populated logical structure.

(Nolan 2011a: 68–69)

2. A workspace: this is the area where the mechanisms for processing the structures take place, i.e. the place where the input is processed, much in the same vein of Van Valin's workshop mentioned above. Each constructional schema, then, is endowed with its own workspace where processing instructions activate and operate according to the constraints included in the construction body.

11. For Diedrichsen (2011: 185), the constraints may be linguistically and non-linguistically grounded, that is, the speaker's general and cultural knowledge also counts as an indicator to determine if the constructional meaning will be activated or not (e.g. the *anticipation of adherence-request* construction discussed in Diedrichsen (2012)).

3. The construction body: this is the place where the morphosyntactic, semantic and pragmatic properties of the construction are encoded in as much as they influence the RRG linking system. By incorporating some of the insights from the LCM (cf. Section 4), we here propose to substantially enrich the semantic properties of each construction in order to account for the above-mentioned nuances exhibited by the English resultative.

Employing the format of these new constructional schemas, Table 3 records the relevant features for the English property resultative construction:

**Table 3.** The English property resultative construction

1. English property resultative construction	
<b>Signature:</b>	
a.	RP <sub>1</sub> <sup>Actor</sup> V RP <sub>2</sub> <sup>Undergoer</sup> (AP) or
b.	RP <sub>Actor/Undergoer</sub> V (AP) or
c.	RP <sub>1</sub> <sup>Actor</sup> V RP <sub>2</sub> [fake reflexive] <sup>Undergoer</sup> AP or
d.	RP <sub>1</sub> <sup>Actor</sup> V RP <sub>2</sub> [non-prototypical] <sup>Undergoer</sup> AP
as tokens [1 2 3 4]	
<b>CONSTRAINTS:</b>	
C1: AP is [-gradable, +stative] and functions as predicate	
C2: AP is optional as token 4 and 3 in signatures a and b	
C3: Tokens 3 and 4 are obligatory in signatures c and d	
<b>Input:</b>	
1.	RP <sub>1</sub> <sup>Actor</sup> or RP <sub>1</sub> <sup>Undergoer</sup>
2.	V = pred1 and 3. RP <sub>2</sub> <sup>Undergoer</sup> or [ ]
4.	AP = pred2 [-gradable]
Or	
1.	RP <sub>1</sub> <sup>Actor</sup>
2.	V = pred1
3.	RP <sub>2</sub> <sup>Undergoer</sup> = fake reflexive or RP[non-prototypical]
4.	AP = pred2 [-gradable, +stative]
<b>WORKSPACE:</b> input [1], [2], [3], [4] and output [1] or [2]	
<b>Construction body:</b>	
<b>Syntax:</b>	
Juncture: nuclear	
Nexus: cosubordination	
Unit template: 5.2	
PSA: none	
Linking:	
syntax → semantics:	
Parse the input into tokens [1], [2], [3], [4]; [1], [2], [4]	
Then follow the default steps of (7.74) (Van Valin 2005: 280)	
Generate output [1]	
If retrieving a one argument or optionally transitive activity LS in Step 2, make room for token 3 (fake reflexive or RP[non-prototypical])	

(Continued)

**Table 3.** The English property resultative construction (Continued)

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Generate output [2]  
 semantics → syntax:  
 Retrieve the LS for the V  
 If LS is one argument or optionally transitive activity, the construction must add token 3 (fake reflexive or RP[non-prototypical])  
 Then follow the default steps of (7.73) (Van Valin 2005: 279)  
 Generate output [2]  
 ELSE  
 Default linking  
 Generate output [1]  
**Semantics:** [LS<sub>1</sub>] CAUSE [BECOME LS<sub>2</sub>], where LS<sub>1</sub> is the means to obtain LS<sub>2</sub>  
**Morphology:** None  
**Prosody:** None  
**Pragmatics:**  
 Illocutionary force: unspecified  
 Focus structure: unspecified

**Output:**

1. [LS<sub>1</sub>] CAUSE BECOMEpred'<sub>2</sub> (x/y)
2. [do'(x, [pred'<sub>1</sub>'(x, fake reflexive/RP[non-prototypical])])] CAUSE BECOMEpred'<sub>2</sub> (fake reflexive/RP)

**Motivation:** Signatures (c) and (d) require a figurative interpretation

**Family resemblance:** resultative 2, 3, etc.

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As previously explained, the signature singles out the English property resultative construction among the rest of constructions in the repository through four morphosyntactic patterns of occurrence which, respectively, account for Examples (1a), (1b), (3b) and (5a) above. The schema also incorporates three constraints on the construction signatures. The first one characterizes the nature of the AP that functions as second predicate as being non-gradable and expressing a new state, since Example (7) is, in line with Goldberg (1995: 195), odd:

(7) ??He ate himself a little sick

The second and third constraints account for the fact that the AP may be optionally realized in the first two signatures, while it is compulsory in the last two, which, as output [2] codifies, is directly linked to the obligatory presence of the fake reflexive (Simpson 1983) or another Referential Phrase (RP) (cf. unselected transitive resultatives in Goldberg and Jackendoff's (2004: 536) notation). It is worth pointing out that this second RP is marked as *non-prototypical* to deal with those non-subcategorized objects incorporated by the construction (cf. Example (5a)). In fact, if a two-place verbal predicate occurs in signature (d), that is, in the pattern RP<sub>1</sub><sup>Actor</sup> V RP<sub>2</sub>[non-prototypical]<sup>Undergoer</sup> AP, the verb's prototypical argument cannot be realized, as shown in (8b) below:

- (8) a. They drank the pub dry (example taken from Broccias 2003: 198)  
 b. \*They drank the beer dry

The incorporation of this non-prototypical or non-subcategorized RP in the verbal LS could be grounded in the nominal qualia annotations that RRG posits to represent the selectional restrictions of predicates (Van Valin 2005:52). Drawing on Pustejovsky's (1995) Generative Lexicon theory, RRG details the semantic properties of nominals by means of the well-known four qualia roles: constitutive, formal, telic, and agentive (q.v. Pustejovsky 1991:426–427). Since not every RP qualifies as a constructional argument of the resultative (e.g. \**They drank the window dry*), through the process of co-composition (Pustejovsky 1995, 1998; Van Valin 2012), we believe that the telic role, which specifies the purpose and function of an object, could motivate the occurrence of *the pub* in (8a) through the inclusion of the LS *do'* (x, [*drink'* (x, (y))]) among its qualia to show that pubs are places where people drink.<sup>12</sup>

After this brief excursus, we return to the explanation of Table 3. The constructional schema incorporates the input sequences that activate it, as well as the output strings generated once the criteria spelled out in the construction body are applied. In other words, when the input comprises the first four tokens, the output LS is (1), where any LS brings about the new state of the second argument (y) if the LS is transitive or the new state of a one argument LS(x). However, when the input strings correspond with the last four tokens, the output LS is (2), where it is codified the fact that the y argument is an argument of the construction (either a fake reflexive or a non-prototypical RP) not an argument of the verb, as in *That man worked himself sick* (COCA, 2011) or in the well-known instance *The joggers ran the pavement thin*. The mechanisms required to process and operate on these variables are located in the workspace of the construction.

Moreover, the construction body presents the syntactic, semantic, morphological, prosodic, and pragmatic features of the English property resultative. We concur with Van Valin (2005:239) that, in the case of the English language, there appears to be no relevant morphological markers or pragmatic properties for this construction (cf. Table 2). Likewise, information about the juncture and nexus types, the unit template and the PSA remain the same. It is in the syntax-semantics-syntax linking and the semantics where our proposal differs. As for the syntax-semantics linking, if the default steps of the algorithm contemplated in Van Valin (2005:280) are followed through, the first output LS is generated. However,

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12. Likewise, co-composition or any of the other processes of the Generative Lexicon theory (i.e. type coercion and selective binding) could validate or block the occurrence of the resultative predicate in post-verbal position with certain arguments (e.g. (4)–(6)). It is beyond the scope of this study to provide the exact mechanisms regulating these processes but, for instance, in an example such as (4b), *Tobias ate the bowl* {*clean/empty/\*sick/\*silly/\*to death/\*to sickness/\*to pieces*}, the qualia defining *bowl* must somehow allow its composition with the predicates *clean* and *empty* but block it out with *sick*, *silly* or *to death*.

if in step 2 of the linking algorithm the retrieved LS of the verb is that of a one-place activity LS, in order not to violate the Completeness Constraint (Van Valin & LaPolla 1997; Van Valin 2005), the fake reflexive or non-prototypical RP of the input string must be accommodated in the LS, thus generating the output LS [2].<sup>13</sup> In the semantics-to-syntax linking, on the other hand, the obligatory presence of the fake reflexive or non-prototypical RP contributed by the construction must be correctly identified at the very beginning of the linking algorithm, that is, when accessing the LS of the verb.

As for the semantics of the construction, the construction under scrutiny displays two separable subevents or LSs, namely, the verbal subevent or LS<sub>1</sub>, logically determined by the verb, and the constructional subevent or LS<sub>2</sub>, which is brought about by means of the verbal subevent (cf. Goldberg & Jackendoff 2004: 538). For instance, in the property resultative *par excellence* or signature (a) exemplified in (3a) (cf. *He hammered the metal flat*) *he*, which is the actor, causes the undergoer (*the metal*) to result in a state of flatness by means of the hammering activity. Suffice it to say that the same rationale applies to the rest of resultative configurations, i.e. signatures (b), (c), and (d).

Finally, unlike the constructional schema proposed by Diedrichsen (2010, 2011) and Nolan (2011a, b), the present proposal incorporates two additional key features, namely, the motivation and the family resemblance connection. By way of illustration, whereas an instance like *They painted the walls red* or the one given in (3a) are non-figurative, examples realizing, say, signature (c), e.g. *He drank himself sick* (COCA, 2003) or *We laughed ourselves silly* (COCA, 2004), require a metaphorical interpretation of the whole sentence, according to which the activities of drinking or laughing (target domain) are treated as effectual actions (source domain) causing changes of state.<sup>14</sup> In other words, it is through the recategorization of these

13. The Completeness Constraint (Van Valin & LaPolla 1997: 325–326; Van Valin 2005: 129–130) regulates the semantics-syntax-semantics linking by assuring that the number of arguments in the clause coincides with the explicit argument positions in the LS of the verb, and vice versa. For instance, in the case under consideration, namely, the syntax-semantics linking of intransitive verbs like *bark* in (3b), what could seem like a mismatch between the two syntactically realized arguments (*the puppy* and *himself*) and the one-place activity LS of the verb, in fact, poses no problem to the Completeness Constraint because the fake reflexive is an argument provided by the construction which must be incorporated into the activity LS.

14. The term effectual action is to be understood as an action that has a direct impact on an object in such a way that the object is caused to change its state, location, or to become physically affected (see Ruiz de Mendoza & Pérez 2011: 14 for more details).

verbs into verbs denoting effectual actions (e.g. *push*, *kick*, etc.) that their fusion with the construction at hand is licensed.

But the AP resultative is not the only way in which resulting events can be expressed in English. For example, one may employ figurative motion to talk about a result (e.g. *He drank himself into a coma* (COCA, 2004)), we may simply refer to the object referent resulting in a different location, whether metaphorically or not (e.g. *They laughed the actor off the stage* or *The kid kicked the ball into the net*), or we can specify the whole figurative path of change from beginning to end, as in *The witch turned him from a prince into a frog* (Levin 1993: 57), to name but a few cases. Since all these examples are not completely alike but do share certain aspects, the feature labeled *family resemblance* in Table 3 is meant to capture relations among constructions in the construction repository (cf. Figure 2). The remainder of this chapter discusses these issues in some depth.

#### 4. A family of constructions: A preliminary proposal

To the extent of our knowledge, the resultative as a group of constructions connected in a family resemblance fashion has only been treated by Goldberg and Jackendoff (2004). More concretely, for these authors (*ibid.*: 536), the notion of *family resemblance* is explicitly used to refer to “the sort of family resemblances recognized to exist in non-linguistic categories” (e.g. Wittgenstein 1955). Other authors such as González-García (2009, 2011) have provided an in-depth examination of object-related depictives (e.g. *He thinks himself virtuous*) following a family resemblance approach in which a number of (sub)constructions group together on the basis of a shared, albeit not identical, syntax and semantics.<sup>15</sup> Drawing on these authors, the present study also aims to employ family resemblance with a view to organizing the RRG construction repository. In so doing, Figure 3 presents a preliminary proposal of the way in which the family of the resultative could be structured.

The highly abstract pattern located on the left in Figure 3 branches into various semantically and syntactically related structures. Thus, whereas the property

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15. González-García argues that, instead of a constructional polysemy analysis, a family resemblance analysis seems more adequate to capture commonalities as well as the idiosyncratic particulars of object related depictives in English and Spanish. In his own words: “a family resemblance analysis may well be, on both descriptive and explanatory grounds, more adequate than a constructional polysemy analysis, especially if information from decoding alone (rather than in conjunction with that from encoding) is taken into account” (González-García 2009:22).

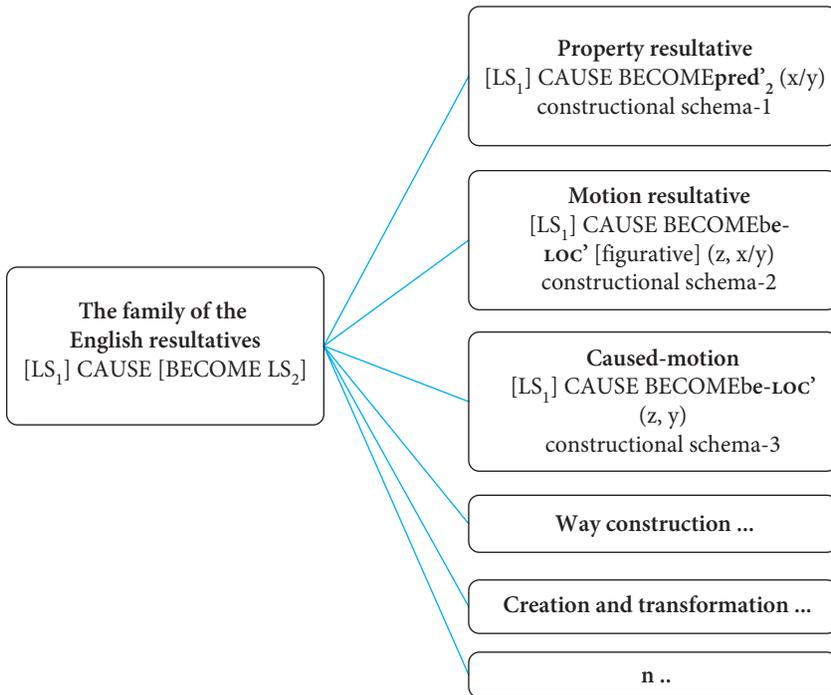


Figure 3. The family of the English resultative

resultative realizes the result slot through an AP, the PP or motion resultative expresses changes of state as if they were figurative motion towards a different location. In turn, while in the caused-motion construction one of the entities changes or is caused to change location, the *way* construction focalizes on the creation of a path through obstacles until a result is reached (e.g. *They've all elbowed their way into the lucrative worlds of NYC real estate* (COCA, 2007)). Nonetheless, because space constraints preclude a lengthy description of each of these configurations, we will only be dealing here with the motion variant of the previously-introduced property resultative, i.e. the motion resultative in Table 4. At this point, we need to stress the fact that although we agree with construction grammarians like Boas (2003), Broccias (2003), Goldberg and Jackendoff (2004) or Peña (2009) on considering the AP and PP resultatives as a unified phenomenon, the current architecture of RRG schemas requires a separate table for each of them.

The constructional schema for the English PP resultative or motion resultative in Table 4 displays very similar information to the one found in the English property resultative construction discussed in Section 3, namely, the signature, input,

**Table 4.** The English PP or motion resultative construction

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**2. English PP resultative or motion resultative construction**

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**Signature:**

- a.  $RP_1^{Actor} V RP_2^{Undergoer} (PP)$  or
- b.  $RP^{Actor/Undergoer} V (PP)$  or
- c.  $RP_1^{Actor} V RP_2 [fake\ reflexive]^{Undergoer} PP$  or
- d.  $RP_1^{Actor} V RP_2 [non-prototypical]^{Undergoer} PP$

as tokens [1 2 3 4]

**CONSTRAINTS:**

- C1: PP functions as predicate
- C2: PP is optional as token 4 and 3 in signatures a and b
- C3: Tokens 3 and 4 are obligatory in signatures c and d

**Input:**

1.  $RP_1^{Actor}$  or  $RP_1^{Undergoer}$
2.  $V = pred1$  and 3.  $RP_2^{Undergoer}$  or [ \_ ]
4.  $PP = pred2$

Or

1.  $RP_1^{Actor}$
2.  $V = pred1$
3.  $RP_2^{Undergoer} = fake\ reflexive$  or  $RP[non-prototypical]$
4.  $PP = pred2$

**WORKSPACE:** input [1], [2], [3], [4] and output [1] or [2]

**Construction body:**

**Syntax:**

Juncture: nuclear

Nexus: cosubordination

Unit template: 5.2

PSA: none

Linking:

syntax → semantics:

Parse the input into tokens [1], [2], [3], [4]; [1], [2], [4]

Then follow the default steps of (7.74) (Van Valin 2005:280)

Generate output [1]

If retrieving a one argument or optionally transitive activity LS in Step 2, make room for token 3 (fake reflexive or RP[non-prototypical])

Generate output [2]

semantics → syntax:

Retrieve the LS for the V

If LS is one argument or optionally transitive activity, the construction must add token 3 (fake reflexive or RP[non-prototypical])

Then follow the default steps of (7.73) (Van Valin 2005:279)

Generate output [2]

ELSE

Default linking

Generate output [1]

**Semantics:** [LS<sub>1</sub>] CAUSE [BECOME LS<sub>2</sub>], LS<sub>1</sub> is the means to obtain LS<sub>2</sub> and LS<sub>2</sub> is figurative motion

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(Continued)

**Table 4.** The English PP or motion resultative construction (Continued)**Morphology:** None**Prosody:** None**Pragmatics:**

Illocutionary force: unspecified

Focus structure: unspecified

**Output:**

1. [LS<sub>1</sub>] CAUSE BECOMEbe-LOC'[figurative] (z, x/y)
2. [do'(x, [pred<sub>1</sub>'(x, fake reflexive/RP[non-prototypical])])] CAUSE BECOME be-LOC'[figurative] (z, fake reflexive/RP[non-prototypical])

**Motivation:** A CHANGE OF STATE IS A CHANGE OF LOCATION

Signatures (c) and (d) require a further figurative interpretation

**Family resemblance:** resultative 1, 3, etc.

workspace, and construction body features. Therefore, we will only concentrate on detailing those aspects where they differ, i.e. the semantics, the output, the motivation, and the family resemblance. Below are some examples for each of the signatures of the construction under study:

- (9) He broke the glass (to pieces) (GBC, 2005) (signature (a))
- (10) The vessel broke (to pieces) (GBC, 2009) (signature (b))
- (11) I walked \*(myself into exhaustion) (COCA, 1992) (signature (c))
- (12) Sue swept \*(the broom to pieces) (signature (d))

In relation to the semantics of this construction, we again find two separable sub-events. The constructional subevent or LS<sub>2</sub> is determined by means of the verbal subevent or LS<sub>1</sub>, but the constructional subevent (i.e. the new attained state) is understood as involving figurative motion. This particular fact is also codified in the two output LSs by means of the location predicate *be-LOC'* and the tag [figurative]. But, how can we support the existence of this figurative motion component? Here is where, once again, the addition of the key *motivation* to the constructional schema is called upon. Hence, on the grounds of the metaphor A CHANGE OF STATE IS A CHANGE OF LOCATION, the motion component of the PP resultative is tackled. This metaphor, amply studied in Lakoff and Johnson (1999), is, as its name suggests, utilized to understand a change of state (target domain) as if it were a change of location (source domain) and it applies to all signatures in Table 4 (Examples (9)–(12) above). Such a metaphor, however, is not operational in cases of the property resultative (cf. *Chris hammered the metal flat*) since there is no linguistic marking of motion of the type “into Z”, “out of Z”, “to Z”, etc. on the basis of which one could interpret the metal becoming flat as if it were motion towards a location. Nonetheless, as briefly addressed at the end of Section 3, this does not

mean that specific instances of the property resultative do not involve any kind of figurative understanding. Cases in point are those of *He laughed himself silly* (signature (c) in Table (3)) or *He ran his Nikes threadbare* (signature (d) in Table (3)). Seemingly, realizations representing signatures (c) and (d) in Table 4, respectively exemplified by (11) and (12) above, also call for an additional metaphorical reading (besides that of A CHANGE OF STATE IS A CHANGE OF LOCATION). Take instance (12), which we can elaborate as follows: “Sue caused the broom to break into pieces by using it to sweep the floor”. Here, the two subevents, namely, “Sue sweeping with a broom” and “the broom breaking to pieces”, are integrated into a single composite event through a causal frame (as required by the construction at hand) where sweeping causes the broom to break. Consequently, thanks to the metaphor AN ACTIVITY IS AN EFFECTUAL ACTION, we can understand the activity of sweeping as if it were an action with an impact on the object (i.e. the instrument used to perform the activity (the broom) is conceptualized as the object of a causal action). Hence, the feature labeled motivation in Tables 3 and 4 can account for situations in which a metaphor underlies all signatures (cf. A CHANGE OF STATE IS A CHANGE OF LOCATION), and/or cases in which specific signatures are in need of a figurative analysis.

With regard to the family resemblance slot, as we would like the construction repository to attain a certain degree of structured organization, it turns out to be indispensable the inclusion of pointers to the other members of the family a particular construction belongs to. In Tables 3 and 4, this information is recorded with the name of the family of the English resultative, followed by the number of the constructional schemas that are part of it (1, 2, 3, etc. 1 being the property, 2 being the PP resultative, 3 the caused-motion, etc.). However, relations among constructions should not be merely described. Rather, the underlying reasons, if any, that motivate each of the constructions presented, as well as the relations holding among them, are to be explicitly stated. From our point of view, this cannot be done without acknowledging the role of metaphor and metonymy. In the meaning construction model known as the LCM, cognitive phenomena like high-level metaphor and high-level metonymy are viewed as so-called *external* constraining factors whose recurrent presence in many of the argument structure constructions discussed in the literature affect fusion processes either permitting or disallowing them (see Ruiz de Mendoza & Pérez 2001, 2011; Ruiz de Mendoza & Mairal 2007; Ruiz de Mendoza & Peña 2008; Peña 2009; Ruiz de Mendoza this volume, for examples and details).<sup>16</sup> A case in point is that of STATES ARE LOCATIONS which,

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16. In the LCM, these cognitive operations are termed high-level in the sense that they involve generic cognitive models and work at higher levels of abstraction (e.g. the notions of

according to Ruiz de Mendoza and Pérez (2011:14), is one of the various high-level metaphors underlying grammatical phenomena. Thus, in line with Luzondo (2011), we argue that the full gamut of constructions presented herein, all of which express result (with or without a motion component), relate on the grounds of the high-level metaphor STATES ARE LOCATIONS, which works by triggering a whole network of dependency relations (rather than a mere combination of individual metaphors into more complex ones) that motivate the existing connections among various members of the family. Drawing on Lakoff and Johnson (1999:52), if STATES are conceptualized as LOCATIONS, then changes of state are naturally seen as changes of location. Following this rationale, the metaphor STATES ARE LOCATIONS defines a whole natural logic system according to which CHANGES OF STATE ARE CHANGES OF LOCATION, CHANGING IS MOVING, CAUSING A CHANGE OF STATE IS CAUSING A CHANGE OF LOCATION, etc. Much in the same vein, specific cases like the creation/transformation constructions (e.g. *Martha carved a piece of wood into a toy*) outlined in Figure 3 are motivated by the high-level metaphor A CAUSED CHANGE OF STATE IS A CHANGE OF LOCATION. By the same token, the high-level metaphor AN EXPERIENTIAL ACTION IS AN EFFECTUAL ACTION is at work in some realizations of the caused-motion construction (e.g. *They laughed the actor off the stage*), whereas the high-level metonymy INSTRUMENT FOR ACTION motivates some realizations of the way construction like *He elbowed his way into the mythical room* (COCA, 2010). In sum, these factors demonstrate that the paramount role played by (high-level) metaphor and metonymy in argument structure constructions of this kind cannot be avoided if a fine-nuanced analysis is to be pursued.

## 5. Concluding remarks

In this chapter we have presented how a projectionist theory like RRG can benefit from constructionist views by enriching the constructional schemas already available in the theory. Our work then, although preliminary, concurs with Van Valin (2013) in the necessary compatibility between the projectionist and the constructionist worlds.

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‘cause’, ‘effect’, ‘process’, ‘result’, etc.). It is worth emphasizing that the LCM turns out to fit in perfectly with Diedrichsen’s (2011) idea of maintaining constraints to a minimum since, on the basis of a reduced set of delimiting factors (i.e. high-level metaphor and metonymy), one can account for large sets of data, regardless of the constructions under scrutiny (cf. Ruiz de Mendoza this volume for a detailed account).

Inspired by the studies carried out within CxG(s) and the LCM, we have put forward two schemas to account for the morphosyntactic, semantic and pragmatic features of the English property and motion resultative constructions. In particular, employing the overall formalism for the representation of constructions proposed in Diedrichsen (2010, 2011) and Nolan (2011a, b), we endow each schema with a specific signature, a number of constraints on the signature, input and output strings, a workspace, and a construction body. Furthermore, we also venture the inclusion of two new features, namely, information about the motivation and the family resemblance of the construction. Precisely, these new aspects allow us to give a glimpse of what a structured construction repository may look like if the family-resemblance approach were exploited in RRG.

Because the role played by metaphor and metonymy is crucial to motivating each of the constructions presented, as well as the relations among them, we have tentatively proposed the incorporation of the LCM apparatus of external constraints into RRG schemas. Two would be the main advantages: first, being only two cognitive operations, their assimilation would not interfere with the desire to keep constraints to a minimum. Second, RRG schemas would gain a greater degree of descriptive and explanatory power when handling the complexity of argument structure constructions.

Although for construction grammarians the schemas presented here would be far from encompassing all the characteristics the English resultative displays, much has certainly been obtained within the RRG realm, as a quick glance at Table 2, and Tables 3 and 4 shows. Needless to say that more research is needed to corroborate this line of cooperative work between projectionist and constructionist views. This chapter sustains that such collaboration is indeed feasible and fruitful.

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